

S.16.

HISTORY
OF THE
BERWICKSHIRE
NATURALISTS' CLUB.

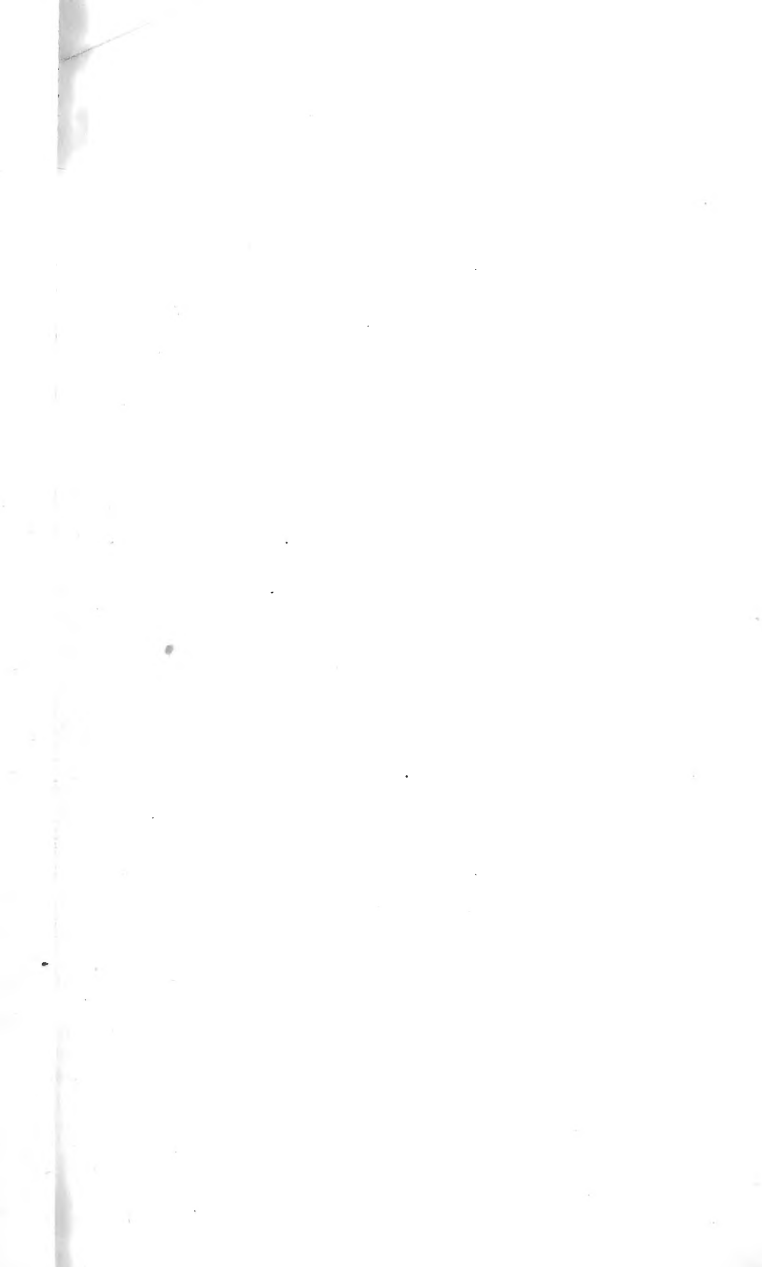
INSTITUTED SEPTEMBER 23, 1831.

"MARE ET TELLUS, ET, QUOD TEGIT OMNIA, CÆLUM."

1879—1881.

ALNWICK:
PRINTED FOR THE CLUB
BY HENRY HUNTER BLAIR, MARKET PLACE.
1882.









PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Berwick, October 15th, 1879. By JOHN PAXTON, Esq., President.

GENTLEMEN,

MY first duty is to thank you most sincerely for having chosen me as your President for the year now about to expire. That you should have elected me, who am only a smatterer in Natural Science, knowing a little of many things and not much of anything, to succeed such an eminent veteran as Professor Balfour, astonished no one so much as myself; and now standing here, I feel my position most keenly, as I am conscious how far my humble endeavours must fall short of his eloquent and instructive address. On that occasion he was accompanied by his wife and son. I am sure the deep sympathies of the members are with Dr Balfour in the painful bereavement he has since then sustained in the death of Mrs Balfour.

Soon after I commenced my medical studies, fifty-three years ago, in this town, under the late Dr Cahill, I had the good fortune to make the acquaintance of Dr Johnston, one of the original founders of this Club, and its first President.

He was at that time preparing his "Flora of Berwick-upon-Tweed," and had two pupils—John Barnes and William Lilly, both of whom became my most intimate friends. They, besides their other professional duties, assisted him in collecting and arranging his plants, and I frequently helped them, and so had with and through them the benefit of his example and instructions. This was my first introduction to Botany, and, for all I know of it, as well as for a great deal more that I am sorry to say I have forgotten, I am indebted directly or indirectly to Dr Johnston. It is now fifty years since his first volume on Botany was published, and in it one can see how much his mind was imbued with a love of nature, and how he was qualified to impress upon others his own zeal and enthusiasm in the pursuit of natural science. In it also we can see how often the names of the men, who afterwards became the first members of the Club, are quoted as either finding new plants, or new habitats of known ones. We can thus discover that they were all of one mind and working together in one common cause, and how naturally the Club arose out of their intimate scientific and social relations. I can speak from personal experience of Dr Johnston's charming social qualities, and to give you a clearer idea of the extent of his general reading and of the taste and elegance of his mental endowments, I would refer you to passages from the poets Milton, Crabbe, Akenside, Southey, Wordsworth, Cowper, and Byron, as well as from Dr Johnson and other prose writers, with which he graces the heads of his chapters. That the enthusiasm of Dr Johnston, and the easy and liberal constitution of the Club as originally formed, struck a chord which harmonised with the disposition of numerous minds, its extensive progeny of Field Clubs throughout the country, as well as the present wonderful increase of the Club, continue to shew. No doubt, since the parent members have mostly been taken from among us, we have been indebted to the same qualities in many others like minded, especially in our past presidents, and our honorary secretaries past and present.

With reference to our meetings of this year, I shall say very little, as Mr Hardy has made copious notes, some of which he will read to us to-day ; and these in a more extended form, you will be able to peruse in our next number. I will only mention that although the summer was so excessively wet, we were fortunate enough to encounter on one day only rain enough to hinder us from carrying out our programme.

I cannot omit referring to the courteous reception of the members of the Club at the different places visited. Especially ought we to send a vote of thanks to Canon Greenwell, the President, and Captain White, the Secretary of the Northumberland and Durham Archæological Society, for all their kind endeavours to entertain us ; to Canon Greenwell also for his lecture, and Mr Longstaffe for his paper on Durham Castle, which we were sorry he could not read to us himself, as well as to his capital substitute, Canon Ornsby, who came forward at a moment's notice, that we should not be disappointed. I am sure the Durham meeting will remain with those of us who had the good fortune to be there, as a pleasant memory to the last day of our lives.

It was in September, 1831, that this Club held its first meeting at Grant's House. As 1881 will be its jubilee year, I would suggest that the September meeting of that year should be held at the same place, and that we should endeavour to have one of our oldest members as President. It would be very interesting to hear from the lips of such a one, his reminiscences of the early meetings and some of the unwritten traditions of the Club.

In the *Scotsman* of Friday, the 12th September, appeared a notice of our last number, evidently written by one who has a thorough taste for our pursuits, and who seems to be well acquainted with Roxburghshire. There are two passages in that article I should like to quote to you. In the first he says, "is anything in this world better than innocent enjoyment in a loved companionship? Some men gravely concerned in helping the world from running off the

rails, or eternally building up ambitious schemes that a single gust of ill fortune may wreck, as the storm tears to atoms the glittering silken web of the spider, cannot understand all the much ado of naturalists about nothing. May this not be chiefly because they have never personally dipped into such pursuits, have never thrown themselves into contact with the living power of nature speaking through the green ferns, the waving boughs, the varied hues and forms of the vegetable world, the humming insects with all their curious organisms, the singing birds with multiform methods of attack and defence, the habits of the animated tribes, and the wonderful mental endowment which enables them to maintain existence in their world, which seems to have no law but individual will. Along with all these the naturalist enjoys the music of the life around him, the gush and gurgle and dash of the running stream, the contrast of green woodland with the grey moorland, the calm repose of the stable hills, filling eye and ear and other unnamed senses with exquisite enjoyment, calling forth new sympathies with the life around him, disenthraling his spirit from antiquated bondage and giving him continual sips of that fine freedom of spirit which comes from looking into nature with one's own eyes and reason." Here is fine writing, much finer than anything I could possibly say in praise of our pursuits. The other passage is about Geology. He says, "Geology is the only science that seems to be overlooked by those ardent explorers, and this we may be allowed to regret, as the Old Red and most of the Silurian in the counties of Berwick, Roxburgh, and Selkirk are fossiliferous, but the extent to which they are so, and the stratigraphical relations of the respective stages of these formations are yet to be worked out by patient investigation of resident observers. The valley of the Jed from Dovesford upwards, and that portion of the Slitrig, south of Stobs Castle, and up to the Cheviots, as well as Silurian areas south-west and north-east of these lines, contain numerous bands of upper Silurian Shales, crammed with

fossils, waiting to be disinterred. What the Llandoveries of Berwickshire, Lauderdale, and Tweeddale above Melrose contain is better known, but the fossil treasures in these rocks have, as yet, been but partially explored; and the discovery of fossils in the rocks between the Ettrick and Teviot, would be hailed by many geologists as at present the most important geological work which could be undertaken in Scotland." Now, I would wish to bring the last passage under the notice of our western members; I do not know that part of the country at all myself, but I am sure it would be an excellent work for any of our members resident in that neighbourhood, especially younger members, to investigate its Geology and Paleontology.

Although there happens to be no geological article in our last number, yet we have by no means neglected that science, for there are many excellent and important articles on the subject in many of our former volumes; and at our Alnmouth meeting, Mr Topley gave us a very interesting account of some of his explorations and discoveries on the south side of the Cheviots, and both he and Professor Lebour have promised to enrich our next volume with contributions on this topic.

At Durham, Canon Greenwell gave us advice, which must not be lost sight of, viz., to endeavour by all means in our power, to induce the owners of interesting ruins to take steps to preserve them as far as possible in their present state, without attempting to restore them in the way by which so much mischief has been done to many of our old historic buildings. I am glad to say that Mr Jerningham, the owner of Norham Castle, has done a great deal within the last year or two to prevent as far as possible the further ravages of time on that very fine ruin.

I must conclude by thanking those numerous members who have supported me by attending our meetings, and also by doing a great share of the speaking for me; and I now call upon Mr Hardy, our indefatigable and hard-worked honorary secretary, to read some of his notes of our meetings which he may think most interesting.

Report of the Meetings of the Berwickshire Naturalists' Club for the year 1879. By JAMES HARDY.

THE last meeting for 1878 was held at Berwick, on Wednesday, 16th October. Among others who took part in the day's proceedings, there were—the President, Professor Balfour; the two Secretaries; Sir Walter Elliot, K.C.S.I., &c., &c.; Captain Milne Home, M.P., Paxton House; Revs. J. F. Bigge, Stamfordham; William Darnell, Bamburgh; William Dobie, Ladykirk; Hugh Evans, Scremerston; James Henderson, Ancroft; John George Rowe, Berwick; Evan Rutter, Spittal; Joshua Hill Scott, Kelso; R. Hopper Williamson, Whickham; Capt. J. A. Forbes, R.N., Berwick; Capt. F. M. Norman, R.N., Berwick; Dr Isaac Bayley Balfour, Edinburgh; Dr Barrie, Dumfries; Dr Colville Brown, Berwick; Dr Alexander Dewar, Melrose; Dr Robert Carr Fluker, Berwick; Dr John Paxton, Norham; Dr Henry Richardson, R.N., Berwick; Messrs R. G. Bolam and George Bolam, Berwick; William B. Boyd, Ormiston; Andrew Brotherston, Kelso; William Chartres, Ayton; John Clay, Berwick; William Crawford, Dunse; William Cunningham, Coldstream; Thomas Darling, Berwick; Ralph Forster of Castlehills, Berwick; James B. Kerr, Kelso; James Nicholson, Murton, Berwick; A. T. Robertson, Berwick; Stanley Hill Scott, Kelso; William Stevenson, Dunse; John Thomson, Kelso; Charles Watson, Dunse; William Weatherhead, Berwick; William Wilson, Berwick; Matthew Young, Berwick.

The members assembled in the Billiard-room of the King's Arms Hotel, where Professor Balfour delivered his Address. Those who attended were gratified to see that the venerable Professor had so far rallied from a severe illness, as to be enabled to speak a few words in season, and to shew by his presence the great interest he felt in the welfare of the Club. The remembrance of this event is the more touching now, that he has lost since then his amiable partner in life, who, as well as his son, accompanied him to Berwick on this occasion. The Report of the Proceedings at the different meetings for the season, was read, after which Dr Paxton of Norham was elected as President for the ensuing year.

On this, as on previous anniversaries, the house, once Dr Johnston's, was opened by Mrs Barwell Carter, to members, most

of whom availed themselves of her invitation, and it gave them all sincere pleasure that the associations and memories connected with this interesting house were still kept bright.

The following were proposed as members :—Mr John Watson Laidley, F.S.A., Scot., Seacliffe, North Berwick; Mr J. K. Weatherhead, Berwick; Mr Stanley Hill Scott, Kelso; and were, along with the others nominated at the country meetings, admitted to the membership of the Club. The meetings for 1879 were fixed upon, as afterwards carried out.

Mr Scott, of the Corporation Academy, brought to this meeting two copper coins, dissimilar to any with which we are usually familiar. They had been dug up during the formation of Mr Oswald's Auction Mart, on the line of the old wall round Berwick, quite near to the turnpike road as it passes over the railway. Since then Mr Scott has allowed me to examine them, and I have come to the conclusion that they are of Spanish origin, and, as the antique lettering indicates, referable to an early period. The coins are thin, about the size of silver pennies of Edward I.; well executed, but not struck fair on the metal; and the legend is imperfect from friction. On the obverse within a triple circle, a hand grasps, as if to hold together, three bands stretched archwise across the disc; the middle one of which is strongest. The legend is + IACOBVS DEI GRACIA REX.: James by the Grace of God King. On the disc of the reverse is a passion cross, bordured by a quadrifoil, the lunate segments of which are of double arches fastened at the tips by trefoils. The legend is + CRVX PELLIT OĒ CRVĀ.: the cross drives away every cross. Minute crosses are placed as pauses betwixt several of the words. The marks of its being Spanish, are:—1. The use of the word GRACIA instead of GRATIA. 2. The cross on the disc is the old arms of the kingdom of Aragon; *azure, a cross argent*.* 3. The three combined bands are emblematical of circumstances distinguishing the reigns of James I. and II., kings of Aragon. James or Jayme I., reigned from 1213 to 1256. He conquered Majorca in 1228, and Valencia in 1238, both from the Moors, and united them to his native realm. He was thus justly entitled to bear aloft "the strange device," of a triple cord. His exploits secured for him the epithet of *El Conquistador*.

* Heylyn's *Cosmography* by Bohun, p. 233.

“ James he is called, and he shall be
 King James the Conqueror!
 Now shall the Crescent wane
 The Cross be set on high—
 Valencia shall be subdued;
 Majorca shall be won;
 The Moors be routed everywhere;
 Joy, joy to Aragon.”

SOUTHEY.

Equally applicable is another triple combination, decreed by Jayme II., who reigned from 1271 to 1308, in a general assembly of estates, viz., that Aragon, Valencia, and Catalonia should never afterwards be separated.* This hieroglyph then is appropriate to either. The coin may have reached Berwick through the medium of Gascon troops in the service of the first three Edwards, in their attempts to subdue Scotland. Gascony in those ages was conterminous with Aragon, except for the intervention of the Pyrenees. In June, 1298, Edward I. made a great effort to crush the Scots, and was successful in winning the battle of Falkirk, July 22. There arrived to his support, a strong body of Gascons, about five hundred of whom were men-at-arms, mounted on excellent horses, and clad in brilliant armour; of these a detachment garrisoned Berwick, and remained there until after the king's victory.† While at Berwick some of these foreign troops may have aided in the repairs of the fortifications of Berwick in 1297-8.‡ Again, about 1316, we have Gascons in Berwick, with a brave knight at their head, in command of the town, whom Sir James Douglas encountered and slew at Skaithmuir, near Coldstream, after he and his garrison had made a successful raid into Teviotdale.

“ That tym in Berwik wes duelland
 Edmound de Cailow, a Gascoune,
 That wes a kycht of gret renoune;
 And in till Gascoune, his contre,
 Lord off gret senyowry wes he,
 He had Berwik in keping.”§

In this skirmish “ many Gascons were slain.”||

The first meeting for 1879 was held at Reston, on Wednesday,

* Moreri Dict. Hist., Tome iii.

† Chronicon Walteri de Hemingburgh, ii., p. 174.

‡ Documents Illustrative of the Hist. of Scotland, ii., p. 160.

§ Barbour's Bruce, Book x. l. 878, etc. || Scala Chronica.

The first meeting for 1879 was held at Reston, on Wednesday, May 14. There were present—Dr Paxton, President; Mr Hardy, Secretary; Sheriff Russell, Jedbank; Revs. Adam Spence, Houndwood; William Stobbs, Gordon; Capt. F. M. Norman, R.N., Berwick; Messrs William Currie of Linthill; John Dunlop, Berwick; James Greenfield, Reston; John James Horsley, Alnwick; Peter Loney, Marchmont; George Muirhead, Paxton; John Thomson, Kelso; Charles Watson, Dunse; Wm. Wilson, Berwick; and James Wood, Galashiels.

The morning was misty and raw, but the fog eventually dissipated, and a dry and pleasant walk was enjoyed among the woods, and along the winding roadways on the banks of the Eye. The grounds of Coveyheugh House, through the permission of the proprietor, Mr James S. Mack, S.S.C., were first visited. The mansion is perched on a crag that rises in successive tiers of broken strata, which give it more the contour of a basaltic than a greywacke rock. It is modern, but the situation is not unlike the aerie of a border chieftain, and the lady, Miss Isobell Hall, for whom it was built, had evidently a good eye for the picturesque. It is not without a considerable covering of native oaks, and other planted trees; but the present occupier is making other improvements, which will conduce greatly to its amenity. It is as romantic a situation for a residence as can be found on the course of the Eye water. Though confined, it has a commanding outlook, and affords a sweet view of the stream gliding down a level haugh, past a tile-roofed mill, and away round behind Reston. Examples of the severity of the bypast winter were here apparent; which were more marked in shrubs planted two years ago, and not yet perfectly established. Ivy was extremely withered, and so were the Boxwood edgings. *Laurus nobilis* was almost killed to the ground; *Prunus lauro-cerasus* was blighted; and *Lauristinus* was considerably scorched. A *Wellingtonia*, of considerable size, twelve years old, was quite singed brown; while on the other hand a *Cedrus deodora* was not perceptibly affected. *Aucuba Japonica*, which has stood the late extreme winter well, was only slightly touched; the Rhododendrons were unimpaired, and some of them were in full blossom. Of wild spring flowers, pile-worts, golden saxifrages, and wood anemones had come into blossom. Among the crags, and by the wayside, grew much bishop-weed, Herb Mercury, the great

wood-rush, a quantity of London Pride with most luxuriant foliage, *Saxifraga granulata* among the dry rocks, and some plants of *Campanula latifolia*. A small crag of greywacke slate on the opposite bank of the Eye shews the native tendency of the rock here to become clothed with the glossy moss, *Leskea sericea*, as well as the obscure greenery of *Madotheca platyphylla*, and with *Lecanora parella*, which spreads a coating of white-wash over the stones that it affects. Tufts of *Asplenium Trichomanes* and clusters of the common Polypody issue from the dry chinks and ledges, along with a crop of granulated saxifrage.

A detached field that was passed after crossing the Eye has a story attached to it, worthy of preservation, as a picture of the habits of bypast times. Originally it was a pendicle of Hillend, the next property. The laird of Hillend wanted a horse, but had not the means to purchase it; and the laird of Houndwood possessed a horse that exactly suited his neighbour's requirements, but he was not willing to part with it on trust. To obtain the horse, Hillend conveyed this field to Houndwood; and it is now incorporated with the Houndwood lands.

Crossing the public road near a bridge, the company entered Lamington dean. The under portion belongs to Hillend, and is the only part of it worthy of a visit. The name Lamington dean is a pleonasm. The word as written in documents is Lamendene (1620), Lambdene (1621), Lamenden (1632), Lamendean (1751), and Lamenden (1755). It having probably afforded a sheltered situation, where ewes were placed in the lambing season, it was from that circumstance called the Lambing dean, which name was subsequently communicated to the farm-steading situated on its brink.

At the entrance to the dean a Tree-pipit was heard in full song; and the warble of the Black-cap saluted us when within its precincts. Willow-wrens were numerous and vocal. The lower end of the dean is planted. It then becomes more open, and there a great quantity of drift, mostly gravel, has accumulated in an ancient fissure that formed the primordial dean. A section shews that this drift consisted chiefly of rolled greywacke, mixed with sandstones, greenstones, porphyries, and a dark shale coloured clay, along with sand-beds. Some of these materials have their nearest home in the Lothians; and some even of the Silurian constituents may be derived from the old

conglomerates that flank the East Lothian Lammermoors. Here a pair of recently-arrived Grey Wagtails disported themselves in lively attitudes by the side of the burn. Where the water had cut down to the rock, and little waterfalls were formed, there grew among the mosses many pretty shell-shaped tufts of the pale-green *Jungermannii serpyllifolia*, a rarish species; and farther up beneath the trees a green state of *J. albicans*, and abundance of *J. barbata*, and also of *Madotheca platyphylla*. The greywacke and its accompanying slate here, as well as at Coveyheugh, have a red ground tint. The soil, besides being full of stones, is in general poor and yellow-hued, being that produced by a super-abundance of decayed slate. The predominance of slate is shewn wherever sections of the rock are exposed in the ravines. The furze bushes which were passed had been much compressed by the heavy loads of winter's snow that they had had to sustain, and many of the twigs had been severely frost bitten. It was a trying season for furze fences.

Houndwood House is a fine old building standing by a little dean, in which grow fine old trees; and of these there are many in other parts of the ground. A rookery is established near the house. On the eastern side, the house and private grounds are sheltered by lines of well-grown aged hollies, protected by an outer belt of trees. The hollies were well worth seeing. Along with the other shrubs they had been so well screened, as to be quite uninjured by the winter's inclemency; and the Deodars, Wellingtonias, and Auracarias had likewise escaped the ordeal. A very fine series of Rhododendrons is cultivated here, to which the situation appears to be adapted; as nothing could be gayer than the show of blossom, when it had attained its perfection, some weeks afterwards. The following sorts are grown here:—Queen Victoria, Minnie, Mr John Waterer, Mrs John Waterer, the Grand Arab, the Gem, Hugh Fraser; *delicatum*, *purpureum*, and *fastuosum*. There are said to be few other places in Berwickshire that can rival the display here. In the grounds there is much bishopweed, a prevalent concomitant of old gardens, introduced in some evil hour. *Arum maculatum*, *Doronicum Pardalianches*, oxlips, coloured primroses, daffodils and other Narcissi, the Lily of the Valley, and some fine plots of Solomon's Seal grew in a half-wild state; and there are several Liliiums planted out. The birds sow *Daphne Laureola* all about the place. There

is a good horse-chestnut in the inner grounds ; and a still finer one below the post-road ; both this season most profuse in blossom. The old garden was in front of the house, and was much nicer than the present, which has a tenacious damp soil, in consequence of which the fruit trees were full of lichens. There were some good old perennials in the borders, which are said to have enjoyed a long tenancy. Among others noticed were Solomon's Seal ; *Pulmonaria virginica* then in lively blossom ; the Crown Imperial in flower ; *Physalis Alkekengi* (Winter Cherry), which had been brought from Northumberland ; *Anchusa semper-virens*, here called "Forget-me-not ;" *Fritillaria Meleagris*, nicknamed "Ugly face ;" *Anthericum Liliaster* ; and the scarlet-flowered *Ourisia coccinea*. A species of garden-spurge was observed coming up like a weed, but it was in too infantile a condition for determination. Among the salads grow some plants of Spignel, or *Meum athamanticum*, not a common garden plant. The ivy here, as elsewhere, was still loaded with berries, which the birds had left untouched, their winter's distress arising from the continuance of extreme cold rather than the lack of food.

The holly-leaves, even as early as our visit, were much deformed by the Maggot of *Phytomyza Ilicis*. Despite the winter's severity, there was here, as elsewhere, a great plague of slugs during the spring and summer.

In the dean below the house, which has been natively rendered gay by the *Lychnis dioica*, there has been planted out a profusion of hyacinth-harebells of garden sorts, and also *Doronicum plantagineum*. The woods and shrubbery are quite a sanctuary for birds. Thrushes so much reduced in numbers elsewhere were in full song here ; blackbirds were fairly numerous ; and some weeks after fly-catchers and robins were busy in their old haunts ; the hard-billed sorts not having met with disaster, need not be specified. The rooks, although noisy during the day, settle down quietly at night ; but they snore in their sleep, which may not be altogether agreeable to a stranger who has been told that the house, like most old mansions, has a haunted room.

The most ancient part of the house is a peel-tower, which is still in its entirety, and though occupied, Mrs Coulson, the aged owner, has done all in her power to keep it as it was three hundred years ago. Over the door, which is at the N.W. corner, is

placed a modern stone sculptured with the crest of the Turnbulls—a bull's head—with the motto, "I saved the king." Higher up is an older stone, brought from the old mansion house of Fulfordlees, now pulled down, which till recently, pertained to the ancestors of the present occupant of Houndwood. On a central shield is a monogram, TMR, the whole surrounded with the Latin rhyming couplet:—

"NVNC MEA, TVNC HVJVS,
POST ILLIVS NESCIO CVJVS,
1656;"

which is literally "Now mine, then his, afterwards theirs, I know not whose;" or more freely, "What is mine to-day, may be yours to-morrow." Master (either a clergyman or a lawyer) Thomas Reidpeth was proprietor of "Foulfuidleyes" before June 14, 1666, when Major John Reidpeth, his immediately elder brother, was served his heir of conquest; *i.e.* he had laid out money in acquiring the right; in the lands of "Fowlfuidleyes and Whytlawclovis," in the parish of Cockburnspath.* But the family tradition represents that the T. R., of the inscription was a Major Thomas Reidpath, or Ridpeth, who in 1650 commanded the companies that blocked up the Pass of the Pease, when Oliver Cromwell was hemmed in, previous to his rupture of the cordon by winning the battle of Dunbar.† There was once preserved in the family a letter from one of the king Charleses, in which, while thanking him for his efforts in his cause, it was said of him, that if every leal subject had behaved as strenuously, the affairs of monarchy would have been retrieved. We find, however, Mr, and not Major, Thomas Ridpeth laird of Ffulfurdlied from 1648 to 1661. In 1648, the last year of Charles I., he was one of the Commissioners for Berwick to carry out "An Act of Posture anent the putting of the Kingdom in ane posture of warr for defence;" and in the time of Charles II., March 29, 1661, he, as a heritor, occupied the same office, for "raising an annuitie of 40000 lib. sterling granted to his Majestie."‡ On this account I think that a Major John, and not a Major Thomas, was the royalist.

* Inquisit. Retornat. (Berwick), No. 340.

† "The enemy hath blocked up our way at the Pass at Copperspath, through which we cannot get without almost a miracle."—Carlyle's *Cromwell's Letters*, &c., iii., p. 30.

‡ Act Parl. Scot. vi., part ii., p. 33.—vii. p. 95.

On being invited to enter, the company were received with great kindness by Mrs Coulson, who, though in her 84th year, is still hale and hearty ; and by Miss Coulson, who gave herself an amount of trouble to shew the visitors everything. Some tapestry from Italy (subject—a shepherd, sheep, and trees) was to be seen in the entry hall ; also some curiosities found on the estate, including a ball the size of one's fist, of iron coated with lead, attributed to the Cromwellian period, although probably older. There was also a plain massive gold wedding-ring, with the inscription : *LVVE IS THE BOND OF PEACE*, which had been found in the neighbourhood. Another of corresponding appearance was said to have also been picked up, but trace of it had been lost. The company was then conducted up the narrow stone stairs to an upper landing place, where some more tapestry, belonging to the house, representing a wedding scene, was preserved. Descending the stairs, the vaults were visited, where the cattle were kept in ancient times when invasion was threatened ; these being now utilised for domestic purposes. In one small side apartment two shoulder blades of a sheep were fixed in the walls for pins. There was a recess at the south end wherein the calves had been kept separate from the older cattle. A servant's hall has been made out of the half of it. The vaults were lighted by upright arrow slits, which open wide inwards. The family rooms were inspected, including a bed-room wherein, according to tradition, Queen Mary once slept, which contains, along with other paintings, a very pretty youthful portrait of that unfortunate princess. This was a circumscribed narrow room. The visitants were greatly pleased to see the very agreeable adaptation of the ancient apartments to modern requirements. Before leaving, the company partook of Mrs Coulson's hospitality.

On leaving Houndwood the end of the road leading to Auchen-crow and Chirnside was passed. A little way down, on the upperside of the railway, is an extensive deposit of sand overtopped by gravel and rolled stones, mostly of greywacke. There are many such mounds along this part of the Eye valley. The sand, of which an unlimited supply for building purposes can be here obtained, is sometimes fifteen feet deep, the intermixture with narrow streams of gravel being very small. It was while excavating gravel, hereabouts, in a position still nearer the

railway, that about ten years ago, a British urn was found at the great depth of 15 feet beneath the surface. In working the facing of the railway cutting for gravel, this urn was exposed upon the occurrence of a fall of a quantity of the material. It was then dug carefully out, and was presented by Mr Green, engineer, to the Berwick Museum, where it is now preserved. Other two, if not more, had been discovered there previously. A coloured sketch of this urn was brought by Captain Norman to the meeting. The urn contained, mixed with clay, a number of human bones, with some perfect teeth among them. It had no bottom when it came to the Museum. It is of more than usual capacity; the diameter at the mouth is $11\frac{3}{8}$ inches; and at its widest part, 14 inches; the depth of what remains is 8 inches. It is of rough workmanship and of rude material. The ornamentation which is only on the upper half of the urn is of two kinds. On the one half of the round it consists of spaces with 4 or 5 upright lines, followed alternately by others with as many lines disposed horizontally. An unbroken long line bounds the lower edge of this kind of pattern. On the other half of the round, there is no fixed plan, some of the lines, which are of the dotted kind, and not entire, are perpendicular, and some horizontal; others angular, and even cross-hatched. The lower boundary line across the vessel on this side is of the dotted kind. A series of short oblique lines ornament the rim round the mouth.

The company walked northwards along the public road that passes what was formerly Houndwood Inn, now the Free Church manse. Formerly the banks hereabouts, and continuing southwards to Heughhead, were occupied with brush and coppice wood, like that still conserved on the Renton property. Hillend also had its natural woods (*sylvis*) as we learn from a Retour dated April 26, 1632.* The bank opposite to that on which the Free Church is situated, used to be called the "Wul-cat-brae," which furnishes another testimony to the former existence of a not very popular member of the native fauna. A corn mill once stood on the haugh by the Eye, intermediate between the Free Church and Chirnside road. Near the smithy, but on the

* Inquis. Ret. Berwick, No. 533. Also, Act Parl. James VI., 1621, vol. iv., p. 658. "All and hail the Landis of Hilend with the woddis of the same."

opposite side of the road are several bird-cherry trees ; others grow by the road-side, near Renton house.

Passing the Free Church manse, a fine clump of beech trees indicates the site of an old nursery. Old Amperly, now abrogated, lay on the western side of the Eye, on Horsely farm, opposite the Established Church manse. Amperly, once a possession of the Coldingham monks, was granted by them in 1334 to one Lewis de Cornoioi. "After that it was long the residence of the hereditary foresters (under-foresters must be meant) of Renton, which office for many generations was held by a family of the name of Craik."* There was a piece of ancient forest in its neighbourhood, called Amperly wood, which is now nearly extirpated. The North-British Railway runs through the site of its cottages. An old man, whose memory must have gone back to eighty years, told me that in his youth the farm-garden at Amperly was notable for producing quantities of "lilies" or daffodils. The offspring of these plants appear to have been distributed among most of the gardens thereabouts. In few places are there more to be seen ; and nowhere more profusely than in the manse garden, where also the Crown Imperial hung out its crop of bells.

The public road now winds finely among woods and wayside trees, at each turn revealing an agreeable succession of sylvan prospects. After enjoying these for a time, the company turned into the adjacent natural wood, which is mentioned in the Coldingham charters as the "Grenewde," which name it retains. This wood is of considerable extent, and the trees which are mainly oaks, birches, hazels, mountain ashes, and willows, with a sprinkling of hollies, have the gnarled appearance common to all ancient natural forest growths. Vegetation was too backward to admit of much botanising. Among a wealth of primroses in full blossom, a plant of the red variety was noticed by the Rev. William Stobbs. It is a variety grown in gardens, but was here truly wild. I know not whether it has been by paying more attention than usual to the forms of *Primula*, that I have this season detected two other varieties wild. In Oldcambus dean I found a stalked form of this very colour ; thus approximating the *Polyanthus*. Again in the Pease dean, on one of the railway slopes, I came upon a colony of a variety of the primrose

* Henderson's Popular Rhymes, &c., of Berwick, p. 44.

with nearly white flowers. There was a blush of pink on some of these when they decayed; and hence I infer that they are a sport from the red sort, which is occasionally obtained in that locality. To resume, beds of the wood anemone of a variety of hues from white to light purple grew on the drier soil. The parasitic fungus on the leaves of this plant was common. *Pyrola minor* was not unfrequent; and there was a profusion of the *Betonica officinalis*, *Ajuga reptans*, *Sanicula Europæa*, *Hypericum pulchrum*, *Melampyrum pratense*, *Adoxa moschatellina*, *Lathyrus macrorrhizus*, *Geranium sylvaticum*, *Alchemilla vulgaris*, *Lysimachia nemorum*, *Oxalis acetosella*, and *Viola sylvatica*. There were many grey willow trees in blossom. These have this season been attended by extraordinary quantities of queen humble bees, which, perhaps owing to the cold having killed the field mice that would have fed on them, escaped the winter uninjured. This did not apply to the wasps, which have been extremely scarce. This wood was intersected by several deep but short ravines, with petty streams at the bottom, which present a succession of noisy waterfalls during spates, but are almost dried up for the rest of the year.

The Rev. Adam Spence pointed out the site of an old British camp, half-way up the ascending ground, above old Houndwood Inn, on the march between Houndwood and Renton estates. Some other memorials of the old inhabitants in this immediate district, may not inappropriately be here adverted to, inasmuch as they have hitherto been unrecorded. On the moor behind Greenwood farm lies Greenwood moss. In this, a long time since, as I was told by the late Mr Hope, the peat-diggers on one occasion dug out an old bronze caldron, which was composed of thin plates of metal riveted together. Another of the same kind was come upon in 1857, under the following circumstances. A drainer called James Hewitt was running a drain in Fawcett field, on Brockholes farm, which bounds the Renton estate on the opposite side of the Eye, in a wet marshy place, on which nothing ever grew, evidently an old well-head, when he came upon a bronze caldron, with the mouth upwards. It had no apparatus for handles, but was described as for size and appearance to be like one of the largest furnace pots, and was composed of separate pieces, "clinked together with copper nails." The bronze plates were thinner than even tinned iron. They were

so wasted, that when exposed to the air, they fell to pieces. Of this I have a portion. Of another domestic utensil, but in this instance a brass pot, I find a notice in the *Berwick Advertiser* of July 15, 1843. "In the course of last week, there was dug up from a moss, in the neighbourhood of Renton, a large brass-pot, which from its peculiar form and the manner in which it is in various places corroded and worn, has evidently been concealed for many centuries. It has been sold (in Berwick) for old metal." In 1872, another bronze pot was dug up in Greenwood moss, and is now in the possession of Miss Stirling of Renton House. It is a very neat example, and is entirely smooth; the three ribbed feet are very short, and barely suffice to keep the pot off the ground. It is furnished with loops for a handle. It is 11 inches high; and 33 inches in circuit at its greatest circumference. I have a bronze pot very similar, which is 10 inches in diameter at the top, and 7 inches at the neck; its greatest circumference is $35\frac{1}{2}$ inches; and it stands 11 inches high. The only ornament that it has are three low parallel ridges round the middle. It was ploughed up from a peaty deposit in a field at Ecklaw, which lies up towards Hoprig-shiels, in the parish of Cockburnspath. There is something mysterious about these bronze-pots and caldrons being in most cases extracted from peat-mosses, or well-eyes. I notice that in Mr Campbell's *West Highland Tales*, No. xxxi. (ii. p. 104)—"Osean after the Feen", written down in the island of Barra, that Osean cooks nine gigantic stags in the great caldron of the Feen, which was deposited within a knoll of rushes, that being the exact description of a grown-up well-head. It was certainly a most effective mode of concealment.

After dinner at the Red Lion Inn, Mr Watson, Dunse, exhibited the skin of a Stockdove (*Columba Enas*) shot at Nisbet near Dunse, where several had been seen. It was mentioned that Mr George Bolam, Berwick, had found two eggs of the Stockdove in a rabbit-hole at Hutton Bridge; and Mr Muirhead said that recently a Dotterel had appeared on Lamberton moor, where birds of that kind had not been seen for several years. About the same period, a flock frequented the hill above the post-road near Headchesters, on Redheugh farm, on a newly-sown field near the moor edge. Mr Thomson mentioned that he had seen in Mr Brotherston's shop at Kelso a very fine female Peregrine

Falcon, which had been shot on the 8th May by John Hakin, near Leitholm, under rather peculiar circumstances. Hakin makes his living by shooting wood-pigeons, and uses a stuffed pigeon as a decoy. On the day named the decoy was on the ground, when the peregrine swooped down and knocked it to pieces—Hakin in his turn giving the peregrine its quietus. In a few days it would have been laying. Mr Alexander Leitch, Fairneyside, brought to the meeting a large bronze celt, from Hoselaw, Roxburghshire, corresponding with one already figured in the Proceedings; and a fine celt of green slate, described in last vol., from Longyester in East Lothian. He had also intended to have exhibited two good examples of betrothal silver rings in his possession, which I have since seen. The one is broad and strong, and has two hands clasped, and round its circuit a series of capital letters of an antique character on separate flat pannels, which read IHESVS N. This was from the vicinity of Dunbar. There are similar rings in the museum of the Society of Antiquaries of Scotland; one of a plain hoop of silver has the inscription in full IHESVS NAZARENVS; another with pannels has only IHESVS.* Mr Leitch's second ring is a plain narrow hoop-ring, with the device of a convex heart, flanked by two quatrefoils marked with crosses, the arched footstalks of which issue from the top of the heart. Above the heart are two perforations, by which it might be suspended, when not worn on the finger. It was picked up on Flodden field. A guilloche hoop-ring of silver gilt, with almost the same device, found at Ringwood, was in 1864 exhibited to the British Archaeological Association.†

Extracts were read from a number of letters received in answer to inquiries regarding the effects of the past winter on animal and vegetable life. In the course of conversation, Sheriff Russell remarked that salmon were spawning up to the beginning of May.

The following were duly proposed and seconded as members of the Club:—Rev. Adam Spence, Houndwood; Messrs Peter Cowe, Lochton; James Greenfield, Reston; James Mein, Lamberton; and George Skelly, Alnwick.

* Catalogue of Antiq. in Mus. Soc. of Ant. of Scotland, p. 157; see also Cat. of Antiq. &c., in Mus. of Archaeolog. Institute, Edinr. 1856, p. 128.

† Wood's Wedding Day in All Ages, &c., ii. p. 143-4.

On a previous day, April 21, when examining the ground for the meeting, it was remarked that *Anchusa sempervirens* is still growing where Mr Henderson indicated at the "roadside between the village of Reston and Reston-mains, and on the bank at the head of the 'Valley-brae' as you go from Reston to Coldingham." In this last habitat, which is near Heugh-head smithy, the stem was much hollowed out by the action of some large caterpillar. A quantity of *Viola odorata* was in blossom in a wood-bottom near the Eye, opposite a small garden, not far from Reston mill. A kingfisher was observed near Reston mill. The grey-backed crow had not then left. Two wrens were seen; also a missel-thrush; and a single song-thrush was heard in the evening. The late winter has made a melancholy deficiency in their ranks.

The second meeting was held at Kelso and Morebattle, on Wednesday, June 25. The attendance was numerous, comprising—Dr Paxton, President; Mr Hardy, Secretary; Revs. J. F. Bigge, Stamfordham; Robert O. Bromfield, Sprouston; J. S. Green, Wooler; Thomas Leishman, D.D., Linton; David Paul, Roxburgh; J. Hill Scott, Kelso; William Stobbs, Gordon; and R. Hopper Williamson, Whickham; Sheriff Russell; Capt. J. Broad, Ashby, Melrose; Capt. McPherson, Melrose; Capt. J. A. Forbes, R.N., Berwick; Dr Charles Douglas and Dr Alex. Mackenzie, Kelso; Messrs A. H. Borthwick, Ladiesyde Lodge, Melrose; John B. Boyd of Cherrytrees; W. B. Boyd, Ormiston; Thomas Chartres, Summerfield, Ayton; John Clay, Winfield; Thomas Craig, Kelso; William Currie of Linthill; John Scott Dudgeon, Longnewton Place; John Freer, Melrose; William Johnson, Tweedbank, Kelso; James B. Kerr, Kelso; Peter Loney, Marchmont; George Muirhead, Paxton; Robert Renton, Fans; Frederick Lewis Roy of Nenthorn; John Russell, Galashiels; Septimus H. Smith and Master Alexander Robertson Smith, Norham; John Thomson, Kelso; Charles Watson, Dunse; and James Wood, Galashiels.

After breakfast at Kelso, the company in conveyances took the Softlaw road, and proceeded to Grahamslaw, where the first halt was made. The hawthorns by the waysides, or in the plantings, or little glens opening now and then to the passer by, were full of blossom; and very beautiful they were when the wind brushed through them, and mixed the green with the white sprays.

After gaining the rise a fine free view was obtained. Far away, like an unfolded mantle, a shower hung suspended above the dark blue Eildons, considerably augmenting their grandeur. In other directions the prospect was very extensive, and abounding with objects of interest.

At Grahamslaw, the tenant, Mr James Cunningham, met the members and courteously conducted them through the grounds. The garden is large and well sheltered ; there is a vivid verdure on the grass round the house ; and the well-grown trees are leafy and umbrageous ; three elms were specially conspicuous. In the garden was a capacious stone bowl, with carvings of fruit and foliage on the exterior, sharply but roughly cut ; which some, from its having an aperture beneath to admit of the percolation of water, pronounced to be a font ; while others regarded it as possibly a fancy of some of the Bennets of Marlefield. There is no history attached to it. Sheriff Russell called attention to a moth of the *Plusia Gamma*. This moth has been very abundant this season on the Borders, as well in summer as in autumn. In the Rhine district, between Neuwied and Siegen, and in Saxony, and elsewhere in Germany, its caterpillars have this summer been quite a plague, having destroyed large fields of sugar-beet, and damaged the crops of vetches, pease, beans, potatoes, and young clover ; and machines had to be invented for collecting them ; from 6 to 8 bushels of caterpillars being collected in a day. A butterfly of the *Cynthia Cardui* was also seen in the morning, another of the Lepidoptera that has gained notoriety this season, especially in Switzerland, where migratory bands, in the early part of the year, attracted public attention. The larva fortunately lives on thistles of various kinds.

We are not told the name of the old possessor of this part of the barony of Eckford. In 1547, one "Jhon Grymslowe," who submits among other Roxburghshire gentlemen to the power of the Duke of Somerset, may from his name, be regarded as the occupant at that period.* It had been spoiled in 1523 and 1545. It is variously written Gramislaw, Grymslaw, Grynislawe in the Retours. In 1826, Grahamslaw was occupied by John Riddell, Esq. ; under whose direction both banks of the river were planted, and the walks were laid out.†

* Patten's Account of Somerset's Expedition, p. 89.

† Mason's Border Tour, pp. 193-4,

The house at Grahamslaw now occupies a pretty situation on a terrace overlooking a wooded hollow, along which flows the winding Kale with a somewhat impetuous current. The foot-path down to the water-side intersects a section of the old red sandstone, in which the strata were lying obliquely. The celebrated caves were inspected, and were found to be spacious. Walls have been introduced to uphold the roof, which give the appearance as if there had been a multiplicity of chambers. In 1826, they appear to have been only reached with safety by the aid of the overhanging branches of trees.* Jeffrey in his "History of Roxburghshire" (vol. i. p. 44; and iii., p. 326) makes the statement that "the Grahamslaw or Douglas League," against the government, in the reign of James II., was contracted here; but this is unsupported by any documentary evidence.† It is well known, however, that at a much later period, the Covenanters found refuge in these caves; and that they occasionally held their meetings in a sequestered spot about half a mile distant up the river.‡ The Kale was here crossed by a fragile bridge. Every one will deplore the neglect which has permitted the house of Henry Hall, the famous covenanting laird, to become a ruin. It was a thatched dwelling; the wide rude fireplace still remains entire. The ash-tree still exists under which tradition says his children were baptised by the outlawed preachers. The famous Mr Richard Cameron was licenced to preach, by two other worthies, Mr Welch and Mr Temple, "at Haughead in Teviotdale, at the house of Henry Hall."§ Henry Hall was a noted champion of the Covenant. He was engaged in the battle of Rullion Green among the Pentlands, and acted as a leader in both the conflicts of Drumclog and Bothwell Bridge. He was fatally wounded in an attempt to take him prisoner at Queensferry, June 3, 1680; and the copy of an unsubscribed paper found upon him, generally called the "Queensferry paper," from its uncompromising character, greatly

* Mason's Border Tour, pp. 193-4.

† "The Grahamslaw League" was unknown to Godscroft. "The "Douglas League" was with the Earls of Crawford and Ross, northern Earls. There was no call for the most potent of all the Earls of Douglas to concert a plot like a felon in a Border cavern.—Godscroft's Hist. of Douglas and Angus, i., pp. 344, 352.

‡ New Stat. Account of Rox., p. 226. § Howie's Scots Worthies.

imbittered the government against the proscribed field preachers.* His banner is or was till lately preserved by a family named Raeburn, resident near Dunbar, and an account of it was given by Mr James Drummond, R.S.A., &c., in the "Transactions of the Antiquarian Society of Scotland," for 1859. It is represented in Plate XXVII. of that work. From this paper we learn that Hall's son held the Cameronian opinions of his father; but one of his grandsons turned a conformist clergyman. Another descendant, Richard Hall, born at Haughhead in 1763, after some experience as a surgeon in the navy, settled in London, and became a medical writer of eminence. He was medical officer to one of the Niger expeditions. He died in 1824.†

The note of the *Sylvia sibilatrix*, or Wood Wren, was heard among the tall trees, while some of the party were climbing the bank near an old dove-cot. This stands beneath a barrow-shaped eminence, called the Haughhead Kipp, that appears to be a kaim of sand, like that on which Linton church-yard is situated, and of which there are similar assemblages of re-arranged drift, on the Teviot, not far from Eckford. On this knoll amidst a clump of trees, is the stone commemorating the independent bearing of Hobbie or Robert Hall of Haughhead, the father it is conjectured of Henry Hall. At the top and bottom it is shown that the monument was "Repaired and restored by Lady John Scott, 1854." The inscription reads—

"Here Hoby Hall boldly maintained his right
'Gainst reef plain force armed w. lawless might
For twenty pleughs harnessed in all their gear
Could not this valient noble heart make fear
But w. his sword he cut the foremost soam
In two: hence drove both pleughs and pleughmen home.
1622."

According to Jeffrey, "Tradition relates that it was Ker of Cessford who wanted to carry away the goods and gear of Hobby Hall."‡ On an adjacent knoll surrounded by a wall, is the site of an ancient British grave, which has also been protected by Lady John Scott's interposition. The cist, which was discovered in 1857, consisted of rough sandstone slabs taken from the banks of the Kale; and was 3 feet 10 inches long, and 2 feet 4 inches

* Wodrow's Hist. iii., pp. 205-212.

† Jeffrey's Hist. iv., pp. 367-8; Carre's Border Memories, pp. 252-3.

‡ Hist. of Roxburghshire, i., p. 343.

deep. The body had been doubled up. Along with bones were found a few beads of shaly coal, and a part of a fibula of the same material. The cranium and the bones were small, and were conjectured to belong to a female.*

The road now passed Blinkbonnie farm. Looking across the Kale, several large oak trees on the further bank were still leafless, or only sparsely foliated, shewing the rigorous incidence of the past winter's severity in some peculiarly situated localities. The furze and broom by the wayside were mostly killed to the ground. Here we looked up the valley of the Kale to Caverton Mill, a prospect rather tame, but not unpleasant. Nearing Marlefield, the shrubs planted on the wayside by Sir Gilbert Bennet drew attention. They are now considerably thinned out; *Epilobium angustifolium* is very plentiful, and there are also Crab-apples, Snow-berries, Privets, Honeysuckle, and common Guelder-rose; but what chiefly merited attention was a profuse growing slender-stalked shrubby *Spiræa*. This has obovate wedge-shaped leaves, which have an apiculus and are slightly puberulent, and the racemes of white blossoms, which are very delicate and graceful, are sessile. The twigs bend readily, as if adapted to form a garland, and of this the name *Spiræa* is said to be significant. The species appears to be *S. acutifolia*. = *S. hypericifolia*, var. *acutifolia* of De Cándolle.

At the entrance to Marlefield is a row of fine lime-trees. Marlefield is a fine old place. The house is a long double-winged structure, white-washed, with a superfluity of windows. The tenant said there was room in it to accommodate a regiment of soldiers. It was the property of the Bennets, whose coat of arms is above the door:—"Gules on a chevron between three stars argent, a cross patée gules: Crest, a hand issuing out of a cloud holding forth a cross patée fitched: *Motto*, Benedictus qui tollet crucem." Marlefield, like Houndwood, is accredited with having blood spots that cannot be effaced on one of the floors; but there is no tradition of any circumstance by which they could be accounted for, in either case.

Marlefield was a frequent resort of James Thomson, the poet, during the vacant intervals of study at the University. He was said to be captivated by one of the "fair Bennetas," as Allan Ramsay playfully styles the daughters of Sir William Bennet;

* Hist. of Roxburghshire, iii., p. 332.

and their aunt, as well as their mother, used to divert themselves at the expense of his youthful simplicity. Allan Ramsay was also wont to be domiciled here. In 1721, Ramsay wrote some lines "Spoken to Æolus, in the house of Marlefield, on the night of a violent wind." He retained warm impressions of the charms of Marlefield. Writing April 8, 1724, to William Ramsay, of Templehall, Esq., he speaks of his seat as being another Marlefield.* It has been attempted to identify Marlefield with the scenery of the "Gentle Shepherd," but the tokens of verisimilitude are inconclusive. Mowes burn, and Mowes knowe, two of the coincidences, are merely derived from the old name of the place Mow-mains.† Nor could Sir William Bennet, a prominent Whig, nor his father a persecuted Presbyterian, be accepted as Sir William Worthly, whom the poet makes a cavalier :

"*Sir William*—To whom belongs this house so much decay'd ?

Symon—To one that lost it, lending generous aid
To bear the head up, when rebellious tail
Against the laws of nature did prevail."

The Irish Yews (*Taxus fastigiata*) in front had been nearly killed by the late winter. There are some fine beeches and other timber about the house, and in the ground behind :

————— "A noble horde,
A brotherhood of venerable trees."

The trees in general were reckoned to be about two hundred years old. The place was in possession of the Bennets before 1677. Measurements with a tape line were made of several of the best trees, by Mr Thomson and Mr Loney. In some instances, however, the basal girth was taken too low, and

* Ramsay's Works, i., p. 179; iii, p. 243. Fullarton's edition. This was not Templehall near Coldingham, which with all the other lands and superiorities in and about Coldingham, belonging to Renton, was purchased by William Ramsay, Esq., the son (?) of the poet's correspondent, in 1746, from Sir John Home. Mr Ramsay is said to have named the Berwickshire Templehall after his original estate. In 1764, Mr Ramsay, then resident at Broomlands, sold a tenement of houses near the kirkyard of Coldingham, to John Tuck. This is witnessed by James Ramsay his eldest son, and David Ramsay his 4th son. Previous to 1774, he disposed Templehall to Mr Thomas Johnston. It appears from the Scots Mag., vol. LXVIII. p. 400, that Mr Ramsay was dead before April 27, 1806. These particulars are from private papers.

† New Stat. Account of Roxburghshire, p. 228, where it is first propounded. It is accepted by Mr Jeffrey, Roxburghshire, iii., pp. 338-340.

comprised the offsets of the roots. Mr Thomson gives the result of the joint survey :—

“Behind the house, the most prominent trees were a spruce fir and a silver fir. The former, after having attained an altitude of a considerable height, had apparently been curbed, as a branch broke off and grew horizontally to the east. Within a few feet of the base was a young shoot fair and healthy, which had reached a height nearly equal to that of its ‘mother.’ The silver fir was measured, and it was found to be 9 feet 2 inches in circumference at 4 feet from the base. Other three trees afterwards measured in this part of the grounds were :—A lime, 14 ft. at 4 ft. from the ground, 18 ft. 7 in. at 1 foot, while one limb was 8 ft. 9 in. ; an oak, 10 ft. 6 in. at 4 ft., and 14 ft. 6 in. at 1 foot ; and a beech, 12 ft. 8 in. at 4 ft., and 16 ft. at 1½ ft. This tree had many curious fungi growing about its trunk which indicated that internal decay was at work. Larger trees were in store, however, as, on entering into the lovely park behind the house, the measurers settled on a remarkably fine beech, which measured 22 ft. at 1 foot, 14 ft. 8 in. at 3 ft., and 13 ft. at 5 ft. A plane proved 16 ft. 6 in. at 1½ ft., and 12 ft. 6 in. at 4 feet. One lime was 21 ft. 5 in. at 1½ ft., and another 18 ft. 6 in. at 4 ft., while his younger brother was 14 ft. 9 in. and 11 ft. 9 in. at the same heights. But the most prominent tree of all was the remarkably beautiful and rugged elm in the middle of the pasture, which measured 24 ft. in circumference at 1 foot from the ground, while at 4 ft. the dimensions were 19 ft. 6 in. One limb measured 10 ft. round, and the total spread of this patriarch was over 95 yards round—a measurement confirmed by calculation.”

Old plants were looked for in the garden, but there were not many. *Anthericum liliago* was grown in the borders, and a kind of vetch, the name of which was not ascertained. *Anchusa sempervirens* grew half-wild near the place. *Ranunculus bulbosus* was very prevalent in the pasture field in front of the house ; and it was also the predominant species in the Kale water meadows.

There is a rookery at Marlefield, which is not only one of the largest on the Borders, but is also the winter residence for the rooks of many of the smaller rookeries in Roxburghshire.

Marlefield now belongs to the Marquis of Tweeddale. It is to be regretted that there is no circumstantial account of the Bennets of Grubbet and Marlefield, who were distinguished as agricultural improvers, patrons of literature, and men of public spirit. The following anecdote, which I owe to Mr Smail, merits preservation, as evincing the consideration of the last of that worthy race, for those who had long and dutifully done his behests ; and moreover it is a piece of generosity that belongs to a bygone age. “The late Mr McDougall, tenant of Sorrowlessfield,

near Earlston, told me, that his father and the grandfather of a gentleman well-known in Hawick and the Borders generally, were servants on the estate of Marlefield about the beginning of the century; the one a shepherd, the other the steward, and that their master, the respected and kindly laird of the estate, gave them each a small farm of 50 acres, at a very small rent; he was so pleased with the manner in which he had been served by them during a pretty long service. The hundred acres divided between them had been reclaimed from the moorland, and were divided into equal portions by a dry stone dyke. The old laird took his two honoured servants to the land, after the dyke was finished, and told them each to lift a stone that could again be recognised, and put it into his bonnet. This was done, and the old laird scrambled on to the dyke top and putting his hand within the bonnet, took the stones out, and threw one on each side of the dyke, saying as he did so, 'There's yer farms, an' yer leases.' Each therefore got the 50 acres on which his marked stone fell; and there were no more words than the above, oral or written, about the leases; and both tenants did well in the small farms."

Before getting to Cessford Castle, the old seat of the Roxburgh branch of the Kers, we had to descend into a hollow, where grew some fine-shaped flowering hawthorns, that will soon be overtopped by aspiring plantations of thriving firs. The castle stands on an eminence, not very marked, surrounded by a strong growth of very green grass, an unmistakeable evidence of the frequent presence of reposing flocks; and by a number of old ash trees. The ruins of the keep, which were inspected with very great interest, are in a good state of preservation on the exterior, but all the interior chambers, as well as the vaults are broken down. A fire-place still entire remains, far up the walls, with ornamental stone jambs of red sandstone, and foliated capitals. There are numerous small dark cells, lighted by arrow slits, in the thickness of the walls. The stone of which the castle is built is mostly of red sandstone, the rubble being trap or porphyry. Several young saplings of ash are rooted on the top of the walls, and will probably hasten its dilapidation; howbeit for the present they contribute to its picturesqueness.

The venerable old ash-tree, called the Crow Tree, which stood a few yards from Cessford Castle, and reckoned to be the largest

in the district is now gone. Its measurement in 1798 was as follows:—The height of its trunk was 18 feet; its circumference at the bottom $26\frac{1}{2}$ feet, at 9 feet above the ground 15 feet, and immediately below the clefts 18 feet 2 inches. Calculated in the common way this trunk contained 397 solid feet. At the height of 18 feet three huge limbs branched out from it, each of them equal to a large tree. These were calculated to contain at least 676 feet, making the whole tree 1073 feet, besides several smaller branches not measurable.* In 1812 it measured 27 feet 8 inches at the base, and was accounted the largest but two in Scotland.†

At Morebattle the company had refreshments. Here it was intended that two articles in brass or bronze were to have been shewn to the Club. These had been found in Henshole among the Cheviots, and were said to be braziers of an antique form. They did not reach the place in time. The Rev. Mr Cowan, Morebattle, who saw them, said he could compare them to nothing but spurs of a very complicated form. They are now preserved in the collection of Lady John Scott.

A visit to Gateshaw and Corbet Tower had been contemplated; but for want of time this purpose was abandoned; and the greater number went on foot to see Linton church, passing through the haugh at Morebattle Tofts. On the Kale here, the Rev. Robert Paul, guided by local knowledge, led some of the botanically inclined members to the habitat of *Arabis trifoliata* (or *Turritis glabra*), which is reputed to be an escape from the minister of Howman's garden, situated a great way up the river. Mr Brotherston got plants of it four miles further up the Kale, on a spot where he had known it for over twenty years. Having gained the public road, we might now say that we were on "the highway to Linton." The green hills stand all around the quiet place, to screen it from the blasts, while Hownam Law occupies the back-ground above some lesser heights. Many of the older members are acquainted with the learned and ingenious article on "Linton and its Legends," by Dr Charles Wilson of Edinburgh, preserved in one of the Club's volumes.‡ A portion of this paper, as Dr Leishman remarks, "rests on an opinion now abandoned, but which was for long accepted without suspicion

* Dr Douglas's *Agriculture of Roxburgh and Selkirk*, p. 375.

† *Edinburgh Topographical and Antiquarian Magazine*, p. 23.

‡ Vol. iii., p. 21.

on the authority of Chalmers and others, that this parish was the Linton-rotheric which formed part of the patrimony of the Abbey of Kelso. That is now known to have been West Linton, in the county of Peebles." The church is small. It was restored in good taste in 1858. The Norman font stands before the pulpit. There is an engraving of a careful drawing of it preserved in our "Proceedings" for 1850. The late Mr Elliot of Clifton, on whose lawn it stood, allowed it to be replaced in the church, in the year 1868, and ever since it has been used at the administration of Baptism.

The list of ministers of the parish since the Reformation hangs on the north wall, and reads as follows :—

Walter Balfour, Rector, conformed ..	..	—1560
John Balfour, M.A., ..	..	1610—1616
Robert Ker, ..	..	1619—1658
Robert Boyd, M.A., ..	..	1658—1662
John Brown, M.A., ..	..	1664—1683
John Wilkie, ..	..	1683—1689
Robert Boyd, restored ..	..	1690—1697
Walter Douglas, ..	..	1698—1727
George Hogg, M.A., ..	..	1728—1740
James Turnbull, ..	..	1743—1780
Andrew Ogilvie, ..	..	1781—1805
William Faichney, ..	..	1805—1854

The members of the Club were kindly invited by Dr Leishman to the manse, which is agreeably situated. An Auracaria and a pine tree had been killed in the garden during the winter; but everything else had escaped. On the borders, Mr William Boyd noticed a small yellow flowered species of *Hemerocallis*, rarer than the *flava*. The conveyances, having been sent round, were entered opposite the neat commodious cottages at Linton, recently erected by Mr R. H. Elliot of Clifton Park.

During the journey we were surrounded with thunder showers, but they scarcely reached the company till they were nearly dispersed. A heavy rain had fallen at Morebattle, but had almost ceased before we got there. Before Linton was arrived at, two successive thunder peals were heard, but the clouds drew back, and attached themselves to the hills; and a deep blue-black overspread the eastern horizon, which deceptively appeared to rest upon a dark blue sea; the reflection from this inky sky on the green hill-sides opposite imparted a lurid colour to the grass, more deeply embrowned a moor above the village, while a patch

of whins full of blossom, in a sheltered hollow on the heights, stood out very vividly by contrast with the prevailing gloom. But we rapidly sped away, passing Frogden, the scene of Dawson's experiments that revolutionised agriculture, Kersknowe and Mainhouse; glancing up to whereabouts Blaiklaw stood on the ground above, once the residence of Pringle the poet, who sung so well of "Cheviot's mountains blue," "bonnie Teviotdale," and the pleasant banks of the Kale.

Thirty-five dined in the Queen's Hotel Assembly room, Kelso. After dinner a paper was read "On some Stone Cannon Balls found in the Parish of Swinton, Berwickshire," written by our learned co-member, David Milne Home, Esq., of Milnegraden; and a number of letters were brought before the meeting relative to the effects of the past winter. In one of the letters Sir George Douglas mentioned the occurrence of the Turtle Dove at Springwood Park, where care would be taken to protect it. It was stated on behalf of Mr Andrew Brotherston that an adult female Hobby (*Falco subbuteo*) had been recently shot, and was being preserved by him. This bird had been observed flying about the neighbourhood for some time, and a look out for it having been kept it was shot near Kelso Bridge by Mr Archibald Steel. The same indefatigable explorer had sent a plant of *Meum athemanticum* to be shewn to the Club. It is not recorded as having been found wild on the Scottish side of the Borders, although found on basalt near Thockrington in Northumberland. Some time ago, Mr William Oliver, Howpasley, on Borthwick water, found it growing wild on his hill farm, from which the specimen was obtained. Mr Brotherston subsequently found the plant both in Dumfries and Roxburgh shires. It was popularly known as "Baldmoney." It was employed as a quack medicine, according to Mactaggart. A slate "spindle-birlie," marked on the sides with incised concentric circles, was exhibited, found at Over Howden, near Oxtou, by Mr Robert Sharp. Miss Dickin-son had sent a number of gooseberries from her garden at Norham, which had been entered and hollowed out by a green caterpillar, which was said to differ from the ordinary saw-fly grub that devastates the foliage of the bushes. The blackbirds had detected the lurking foe, but they were carrying off both fruit and caterpillars, so that their aid was rather an additional evil.

The following were proposed as members of the Club :—The Rev. Canon Tristram, Durham ; Rev. D. Millar, B.D., LL.B., Mordington ; Mr Thomas Cook, Alnwick ; Mr Charles Henry Adamson, North Jesmond, Newcastle ; Dr Alexander Mackenzie, Kelso ; and Mr W. F. Vernon, Kelso.

The third meeting was held at Alnmouth and Alnwick, on Wednesday, July 30th. Those present were—Dr Paxton, President ; Mr Hardy, Secretary ; the Hon. and Rev. Evelyn J. Monson, vicar of Croft, Lincolnshire ; Revs. Thomas Ilderton, Ilderton ; Ambrose Jones, Stannington ; F. B. Nunnely, M.D., Rock and Rennington ; W. Rudge, Alnwick ; F. R. Simpson, North Sunderland ; William Stobbs, Gordon ; George Selby Thomson, Acklington ; and R. Hopper Williamson, Whickham ; Lieut.-Col. Briggs, Bonjedward ; Major Holland, Abbey Cottage, Alnwick ; Capt. Forbes, R.N., Berwick ; Messrs James Aitchison, Alnwick ; Thomas Allan, Horncliffe House ; Henry Hunter Blair, Alnwick ; Charles B. Pulleine Bosanquet, Rock ; Cadogan Hodgson Cadogan of Brenckburn Priory ; L. C. Chrisp, Hawkhill ; William Currie of Linthill ; Middleton H. Dand, Hauxley ; John Dunlop, Berwick ; Albert Grey, Howick Hall ; James Hastie, Edrington ; William Hastie, London ; James Heatley, Alnwick ; W. T. Hindmarsh, Alnwick ; W. A. Hunter, Dunse ; G. T. Lebour, F.G.S., Gateshead ; Henry A. Paynter, Alnwick ; Adam Robertson and William Robertson, Alnwick ; I. Simpson, North Sunderland ; Septimus H. Smith, Norham ; Thomas Tate, Alnwick ; John Thomson, Kelso ; William Topley, F.G.S., Alnwick ; J. P. Turnbull, Alnwick.

As the President and Secretary bent their way to the place of rendezvous, it was noticed that at Alnmouth Bridge, a colony of sand-martins had established themselves in the stratified earth-cliff adjoining. Black-headed gulls were actively fishing, or picking up food, along the course of the Aln. A corn-bunting (a locally distributed bird) trilled its song from a tree. An inscription on one side of the substantial stone bridge informs us that this is "The Duchess-Bridge," the date being 1864. On the other side, it is recorded on a cast-iron plate that "To Eleanor Duchess of Northumberland, the Public are chiefly indebted for this Stone Bridge and Foot-path to the Station. A.D. MDCCCLXIV." Almost the first house in Alnmouth arrests attention by a door with an ogee moulding, over which

are the initials T. A., above the date 1713. Alnmouth is prettily seated in a nook by the sea-shore, and enjoys the immunity of clean grassy sea-banks, adapted either for golfing, there being two or three golf clubs here, or for a promenade; a long expanse of silver sand; a clean tidal basin; and an extensive prospect from the heights above. The usual sea-side plants were found on the shore. *Aster Tripolium* was noticed in the salt marshes; *Sagina maritima* on the links, and Major Cadogan pointed out a peculiar pale-coloured ericoid variety of *Galium verum*, which is a sea-side form. The caterpillars of *Sphinx Galii* occur on this part of the coast. The southern view from the station of the artillery battery was rather obscured by haze. Out to sea the lagging smoke of passing steamers hung in blurred masses, which one might fancy to be distant islands partially obscured in fog. The northern prospect was more distinct. Not far off was Foxton Hall, recently tenanted by Mr Bennet. It may be mentioned that the Duke of Bedford, in a visit paid not long since to the north country, came to see the last residence of his faithful steward. Seaton, more inland, appeared next; and then the clustered fishing village of Boulmer, with its red-tiled and blue-slatted roofs picturesquely intermixed. Still more remote were the Howick woods, dark in the morning light. Cultivated fields intervened. Flocks of lapwings and starlings, and numerous larks, were observed to be active. The sea was calm, the day was perfection, nature smiled, the mind felt at ease. The farmers, constantly brooding over the previous dismal weather, almost envied us, and said "we were favoured."

The breakfast was in the Schooner Inn. Here there were a number of stuffed birds, the rarest being the Polish Swan (*Cygnus immutabilis*), which was shot in the Aln close at hand, at a time when the severity of the past winter had induced a small flock of these birds to seek shelter on this part of the coast. Mr Cadogan mentioned that he had recently got a stone implement from the Simonside hills, near the camp there. Mr Dickson, of Sea-bank House, sent a good specimen of *Sirex Gigas*, a rare wasp-like hymenopterous fly, which he had lately captured; also a pencil sketch of a fleshy light green caterpillar of one of the Sphingides, with a sharp thorn-like spike on its head, which fell from a beech tree, when he was angling.

After the transaction of business, a walking party was formed, headed by Mr Topley, which traversed the sea-shore as far as Howick Burn mouth. The others, by means of conveyances kindly furnished by Alnwick friends, reached the same destination by an inland route. From high parts of this interior road a fine view was obtained of the vale of the Aln, a portion of Alnwick town being visible, and the park surmounted by Brizlee hill; and Cheviot lifted its head behind afar off. The land about Lesbury is said to be of good quality. Several ash-trees by the wayside have felt the evil influence of the sea-breeze, and have become decayed and stag-headed; but if properly sheltered, trees will thrive nearer the coast than they are usually attempted to be grown. This deficiency of wood near the Northumbrian coast is painfully apparent in the tract between Killingworth and the sea, and might be remedied by imitating the examples set in the more northern, and one would naturally expect, more exposed parts of the country.* Lesbury is a pretty village, snugly embosomed in trees, with trim gardens in front of the houses, glorious with bright Delphiniums, Orange Lilies, and large flowered blue Irises. As Longhoughton is approached, the soil has a poorer aspect, and from the frequent wet spots visible on the fallow, is evidently undrained. The turnips were a poor late crop. The cottages at Longhoughton had in front the same good old-established flowers for a decoration as at Lesbury. A halt was made at Longhoughton Hall. The church, with its almost unique Saxon chancel arch, was shewn to the visitors, by the vicar, the Rev. L. J. Stephens. Under his auspices the church has lately been renovated and restored, and the work has evidently been carried out in the most careful manner. By invitation the party inspected the fine and extensive collection of roses cultivated by Mr John Smith, and partook of his hospitality. The garden is well sheltered with trees. There were two Araucarias in a thriving state on the lawn. The roses are budded on wild briar stalks, the whole the work of Mr Smith. Maréchal Niel flowers with him in the open air, and this continued in blossom till Oct. 21; Souvenir de Malmaison and Gloire de Dijon were flourishing. Mr Smith has furnished me with a marked Catalogue of those he has successfully treated (William Paul &

* Since this was written, I notice that the Duke of Northumberland has granted a number of trees to plant at Earsdon.

Son's) but they are too numerous to specify; but I may give the numbers as classified, although he assures me that he has several more not indicated. 1. Hybrids of Chinese, Bourbon and Noisette Roses; ten varieties. 2. Austrian Roses; one viz., Persian yellow. 3. Perpetual Moss Roses, one Perpetual white. 4. Hybrid Perpetual Roses, resembling the Hybrids of the Chinese; eighty-seven varieties. 5. Bourbon and Noisette Perpetual; four varieties. 6. Rose de Rosomane, one var. 7. Bourbon Roses (*R. Indica Bourboniana*), one var. 8. Noisette Roses (*R. moschata Noisettiana*), one var. 9. Tea-scented Roses (*R. Indica odorata*), three var. Mr Smith seldom loses one in the severest winters, but not much hoar frost lies in his vicinity. Nothing he says suits them better than a stiff loam on a red clay. He seldom sees finer foliage than they make with him.

The garden used to be a great resort of thrushes, but only a single bird had been visible this season. Blackbirds, previously an annoyance, were now scarce. I understand that on this as well as on other adjacent coast farms, seaweed can be obtained in quantity on the coast, in what is called the "May-drift," and again in autumn; and is applied to the grass on the surface, or is mixed up with manure heaps. Dr Paxton and I were here shewn a gold finger ring, which had been found in a gravel pit near Swarland (Northumberland), which had a small dark blue sapphire, closely resembling the modern quartz-amethyst, simply rounded and not cut, in the bezel. On the outside of the ring were incised cinquefoils and olive branches. Dr Paxton had seen two similar rings, which had been found at Norham Castle, during the recent repairs; both contained sapphires of this tint, nearly in their natural state. One of these was presented to Mrs Jerminham. The kind of violet blue sapphire, with which these rings were set, is called the oriental amethyst.* They are probably of considerable antiquity, when the art of gem-cutting was not practised to any perfection. The violet-sapphire it is next to impossible to engrave. We have other instances of its use in rings. "In 1822, in digging the foundation of a dyke on the north side of the hill opposite to Garchory (in the parish of Strathdon, Aberdeenshire), were found two gold rings and several hundred silver coins. One of the rings is gold, with a small dark sapphire. A ring precisely similar was discovered

* Jameson's Mineralogy, i., p. 56.

16th July, 1829, with other relics, in the coffin of a bishop of Chichester, in the cathedral of that city. The date of the tomb is A.D. 1146. The other was a broken iron gilt ring, with a pale sapphire, and is very similar to many Arabian and Indian rings. The coins were nearly all of Henry III., of England. Some of them were of William the Lion of Scotland, and two of them of King John.* There is a famous ring in Perthshire called "Inchbrakie's Ring." In the days of darkness a poor woman of the name of Catharine McNiven was burnt for a witch near the rock of Crieff. The laird of Inchbrakie strove to the utmost to save poor Kate's life, though his exertions proved in vain. "When the flames were lighted, and her sufferings commenced, she is said to have uttered various predictions against her enemies, and, turning round to Inchbrakie, to have spit a blue stone out of her mouth, which she requested him to take and keep, declaring that so long as it was preserved in the family, his race would never cease to thrive. The stone resembles, and is said to be an ancient sapphire. It is now set in a gold ring, and is most carefully preserved."† This and the following appear to have been "oriental sapphires." In the inventory of John Edgar of Wedderlie, Co. Berwick, who deceased in 1657, is included, "Ane broken gold ring with ane blue stane."‡ The Sapphire of the ancients having been the Lapis lazuli§, the virtues attributed to the one have been transferred to the other; hence nothing can be positively affirmed of the powers either real or imaginery, that old writers have transmitted to us regarding the sapphire; but they may be all summed up in what Renodæus, an old writer on precious stones, affirms of gems in general, that they "adorn kings' crowns, grace the fingers, enrich our household stuff, defend us from enchantments, preserve health, cure disease; they drive away grief, cares, and exhilarate the mind."||

Howick woods were approached through a canopy of over-arching boughs from tall wayside trees. The party alighted

* New Stat. Acct. Parish of Strathdon, p. 546.

† Ibid. Parish of Crieff. ‡ The Scottish House of Edgar, p. 94.

§ Beckmann's Hist. of Inventions, i., p. 468, &c. (Bohn's Edition); Pliny's Nat. Hist. vi., p. 432, Note. (Bohn's Edition). Adams' Paulus Ægineta, iii., p. 228 (Sydenham Society).

|| Burton's Anatomy of Melancholy, Part 2, Sec. 4, Mem. 1, Subs. 4.

and took the walk, which is called the "Long Walk," by the burn; plunging at once into a "boundless contiguity of shade," which, however, was now and then brightened by sunny gleams. This dell is thickly wooded with planted trees nearly all the way to the sea-side. The majority of the trees—beeches, elms, firs—are tall and clean-stemmed. Several of them, however, are twisted, as if they had had a difficulty in their youth to struggle through, before they could become upright. One of the silver firs divided itself in twain, and then became united, to separate again, and again be combined in one; and finally terminated in two tops. The elms grown in most places, as was seen by some cut timber, are quite rotted in the interior. The hollies were little more than bushes; but one of the largest hollies in Northumberland, grew near the steward's house, but was cut down some years ago. *Ribes alpinum* is grown as an under shrub; and *Ruscus aculeatus* is also used for a cover. Plots of herb-mercury occupy some of the bottoms; and clumps of *Vinca minor* have been planted to hide the bareness of others, where the shade has destroyed the natural herbage, and have spread widely.

By the walk side small outcrops of sandstone rock occasionally rise above the surface. Where these occurred *Hieracium vulgatum* invariably appeared. In the swampy places clustered giant butter-burs, Queen of the Meadow, *Geranium pratense*, in its brilliancy, and Cow-parsnip. *Rumex sanguineus* also grew here. In the central part is the well-sheltered Pinetum, where there are some very healthy trees; particularly a row of Araucarias of thirty years growth, so many being seldom together elsewhere. Dr Paxton has been favoured with a letter from Mr David Inglis, the gardener at Howick Hall, which enumerates the more prominent of the conifers here cultivated; and as many of our members have made experiments in this department, I shall extract most of his statements, with occasional remarks.

The principal Conifers grown at Howick are:—*Abies Canadensis* (Hemlock Spruce of North America), large specimens; *A. Douglassi* from 40 to 50 feet high; *Abies Menziesi*, handsome specimens, about 60 feet high. The *Araucaria imbricata*, as noticed, forms a large lot and fine specimens. Of *Cedrus Deodara*, there are fine tall examples, about 40 feet. There are also in the grounds some excellent trees of the Cedar of Lebanon (*Cedrus Libani*), about 70 feet high. Of *Cephalotaxus Fortunei* there are small plants;

and of *Cryptomeria Japonica* and *elegans*, there are also small plants. Mr Albert Grey mentioned that they were not very successful with the *Cryptomeriæ*, the young trees being liable to die out. There are fine specimens of *Cupressus Lawsoniana*; and also *Cupressus macrocarpa*, which rises here 40 feet high. There are small plants of *Picea nobilis*. *Picea Nordmanniana*, *P. Pindrow*, *P. Pinsapo*, and *P. Webbiana*, an exceedingly handsome tree, are also grown here. *Pinus Austriaca* (Austrian or Black Pine), said to be one of the best for planting as shelter, was one of the few that the last winter had embrowned the foliage of. *Pinus insignis* is here perfectly hardy, and can be planted near the sea. There are also *Pinus Genevensis*, the Geneva wild Pine, and *P. excelsa*, the Bhotan Pine. Of *Retinispora plumosa* and *squarrosa*, there are beautiful plants, growing to 12 feet high. There are also varieties of the *Taxus* and *Taxodium*; and fine large specimens of *Thinopsis borealis* (*Cupressus Nootkaensis*). Of *Thuja* or *Arbor vitæ*, there are *Th. gigantea*, *Menziesi*, *occidentalis*, *argentea*, and *pendula*. Lastly *Wellingtonia gigantea* is here perfectly hardy, grows well, and forms a good exemplification of the tree.

The laurels were cut down, but it was merely to thicken their growth. Some of the *Rhododendrons* had suffered from the winter's inclemency, but were springing anew. In other respects no more damage had been sustained here. Owing to its vicinity to the sea, there can be little hoar frost. Near the sea-side end of the walk, a patch of *Epilobium angustifolium* had been planted. The burn at first stagnant, at length broke away to pay its tribute to the great ocean, across the large assemblage of gravel and boulders on the beach. Crossing the bridge, a green knoll, surmounting a crag was reached, whence an extensive view of the coast to the south opened out. On the sea-banks to the north of the burn above the cliffs, *Hippophae rhamnoides*, or Sea Buckthorn, probably planted, grows plentifully. A cormorant was passing, the only sea-bird visible. The contrast of the verdant banks, the dark tangle-covered rocks, and the wan-coloured sea, is always striking. It was on the rocks at Howick Burn mouth that a herd of Round-headed Porpoises (*Phocæna melas*) was stranded on the 19th March, 1853, of which Mr Tate gave an account in the Club's "Proceedings," vol. iii., pp. 176-180. He told me that he was so full of the occurrence, that on the evening after he had visited the place, he delivered a lecture in the

Alnwick Mechanics' Institute, on the Natural History of the Porpoise; it being his custom to seize all such opportune emergencies for conveying positive instruction.

The walking party by the line of coast soon after arrived, and we may now take up the account of what they had accomplished from the minute narrative of Mr Thomson, who had accompanied them. They first visited a camp on the green height above Alnmouth, where they also met with traces of a small circular fort of about 30 feet in diameter on the southern part of the hill. They then walked down to the links, which others of the company had visited in the morning. They passed on to a sandy beach where numerous large boulders of whinstone were scattered about; and then encountered a bed of limestone characterised by a profusion of Encrinites, popularly termed St. Cuthbert's beads. Above high water mark the vegetation was singularly uninteresting, bracken being the predominant constituent. "At Seaton House Point, a small promontory formed mainly of hard, coarse, gritty sandstone, the markings of glacial action were seen on many boulder stones. The sandstone in some places was exceedingly coarse, many of the strata being almost entirely 'pudding-stone,' the 'plums' in which were very large. On rounding the point the sandstone changed both its character and its colour, becoming a finer gritted white, sometimes being tinged by a deep tawny yellow as if igneous action had caused it. Boulmer, celebrated for being the principal resort of smugglers in the olden time, was now in full view. Though the smuggling has now happily ceased, smuggled articles, such as silks and casks of spirits, are sometimes dug up, having been deposited there in bygone times, and been forgotten by their owners. A number of fishing boats were lying in the little harbour, and several men were busy netting salmon. Before we reached Boulmer there was a stretch of the coast extending to about 200 yards in length, where the only plants were *Honkeneya peploides* and *Cakile maritima*. From the low cliffs north of Boulmer the limestone was seen sloping out into the sea. Shortly after this there is a considerable expanse of greyish red sandstone, which stretches levelly out to sea. In the tiny lagoons which dotted its surface were perhaps twenty large herons, two or three herring gulls, a dozen common gulls, and a great number of plovers and lapwings. The sandstone a little way further

on becomes redder and coarser in its grit, and the pudding-stone, though not so coarse, again occurs. At the boundary line, where the Howick Hall property is entered, is a 'dyke' of trap, stretching out into the sea for a hundred yards or so. Another sandstone point intervenes, followed by very dark limestone. On the Sugar Sands there are numerous boulders of limestone and basalt scattered about. After crossing a small burn that enters the sea here the limestone again crops up, this time in great abundance, and full of shells in a very good state of preservation. There are also layers of fire-clay between the limestone. There was a tiny spring of mineral water issuing from the superincumbent clay. The sandstone is again the surface rock after this, and judging by the way the clay is falling down on the cliffs, the recent storm had severely affected it."

During this journey *Thalictrum minus* and the scarlet-flowered Pimpernel had been picked up. *Geranium sanguineum*, *Astragalus Hypoglottis*, and *Scabiosa columbaria*, which all grow on the links, had been passed over; and the rare *Helminthia Echioides*, which occurs on the sea-banks at Howick Burn Mouth, was not seen. Leaving the coast, the united company were conducted by Mr Albert Grey to the remains, in a pasture field, of a circular camp 60 yards in diameter. It had occupied the summit of a gravel mound, which slopes abruptly to the wooded dean. *Echium vulgare* grew here.

The dean was again traversed. Before the Hall was reached, *Listera ovata* was observed near the walk. *Pulmonaria officinalis* also grew there, but had been planted. *Convallaria majalis*, *Smilacina bifolia*, *Lilium Martagon*, *Saxifraga Geum*, and *S. umbrosa* have also been planted out in the Howick woods. Passing over an ornamental bridge, the church was reached, which is of a florid Norman style. Two inscriptions in bronze state, that the church was built at the expense of Sir Henry Grey, Bart., in 1746, and was restored by the present Earl Grey in 1849. The most interesting section of the church is the chancel, which contains the monument to Charles, the second Earl Grey, K.G., and Mary Elizabeth, his Countess. The style is florid Gothic. The company then walked along in front of the Hall, viewing the fine flower gardens, and the richly-foliaged trees indigenous and exotic. The Myrtle here stands the winter out of doors with a slight protection. Behind the mansion stand

two very tall full-leaved trees of *Quercus Ilex*. Leaving the grounds, the greater number of the members went by train to Alnwick, while others drove there direct, reaching it in time to allow such of the members as wished, to visit Alnwick Castle.

After dinner in the White Swan Inn, it was stated that additional reports regarding the effects of the past winter on vegetation had been received. Mr Topley, F.G.S., then gave a very able sketch of the progress and results of the Geological Survey of Northumberland, now in course of completion. Mr Topley's paper was deemed exceedingly valuable, and the coloured geological charts and diagrams on the walls tended to enable members to understand it more easily. Professor Lebour proposed a vote of thanks to Mr Topley for his excellent paper, which he said embodied startling and important discoveries, that had caused much talk among geologists. Mr Topley undertook to extend his paper, and prepare it for the "Proceedings." Mr Topley had with him, for exhibition, a broad wedge-shaped polished stone-axe, found on Alnwick Moor. It appeared to be of decomposed syenite; both quartz and mica were visible on the exterior. It was mentioned and regarded as a rare occurrence that a pair of yellow-hammers had built their nest, about six feet from the ground, in Mr L. C. Chrisp's garden at Hawkhill. The interior of the nest was the same as in other nests of this bird, but the outside was formed of strong coarse wheat straws, with several ears of corn hanging from the nest.

At this meeting the following were proposed for membership—Rev. Charles Kinnear Greenhill, Robertson by Hawick; William Layton, M.A., High School, Kelso; Mr John Gunn, Geological Survey, Berwick; Rev. F. B. Nunneley, M.D., Rennington, Chathill; Rev. Thomas Calvert, 92, Lansdowne Place, Brighton; Rev. Donald McLeod, B.D., Jedburgh.

The fourth meeting was held at Marchmont, on Wednesday, August 27th. There were present—Dr Paxton, President; Mr Hardy, Secretary; Sheriff Russell; Revs. W. Dobie, Ladykirk; J. S. Green, Wooler; P. G. McDouall, Cosgrove Rectory, Stony Stratford; R. F. Proudfoot, Fogo; Evan Rutter, Spittal; J. A. Sharrock, St. Nicholas Church, Newcastle; Adam Spence, Houndwood; W. Stobbs, Gordon; John H. Walker, Greenlaw; Drs Henry Richardson, R.N., Berwick; Charles Stuart, Chirnside; Messrs Archibald Campbell Swinton of Kimmerghame;

W. B. Boyd, Ormiston House ; A. Brotherston, Kelso ; A. Currie, Darnick ; Thomas Henderson, Middle Third ; W. A. Hunter, Dunse ; W. H. Johnson, Tweedbank, Kelso ; J. B. Kerr, Commercial Bank, Kelso ; R. D. Ker, Edinburgh ; Peter Loney, Marchmont ; Hume Nisbet, Edinburgh ; Robert Renton, Fans ; James Wood, Galashiels ; John Russell, Galashiels ; Andrew E. Scougal, Melrose ; William Stevenson, Dunse ; Charles Watson, Dunse.

Till about half-past one there was a continuous rain, in consequence of which the movements of the company were very much restricted, and many points of interest were left unvisited. But Sir Hugh H. Campbell having courteously opened the treasures of art and literature contained in Marchmont House, most of the time was profitably and comfortably spent under cover. Marchmont is distinguished for its well grown-timber trees, many of them of large dimensions, tall and handsome in their appearance, and superabundant in their wealth of foliage. There are some clean, straight, noble oaks on the bank above the Railway ; and the beeches, which are the predominant trees, Spanish chestnuts, and silver firs throughout the grounds, shew by their vigorous strength that the soil although of a stiff tenacious red clay and full of moisture below, is adapted to their growth. The roots do not penetrate deeply, but spread horizontally over a wide area, wherever the ground is dry.

The first point of interest visited was near the summit of the high banks to the north of the railway, and immediately adjoining the station, as being the site of a remarkable landslip which occurred there on the 21st December, 1876. The banks are composed of a red sandy earth, very porous and retentive of moisture. On the occasion of the landslip, the weather was very wet, 3.38 inches of rain having fallen on the 20th and 21st of the month. On the second day of this rainfall, about 9 o'clock at night, a pedestrian crossing the braes at this place, discovered that a great portion of the bank had slipped forward, leaving a great trench or gap about ten feet in width. So steady and deep had been the movement of the soil as it slipped, that several large trees were carried forward, just as they stood, a number of feet from their original position. One of these, a fine oak tree, still as erect and flourishing as ever, and measuring above fourteen feet round the trunk, had been moved ten feet from the spot where

it formerly grew. There has been no change since, nor has the gap shown any tendency to widen, notwithstanding the heavy rains of the present season.

The old mansion house of Redbraes had been situated on a level platform at the top of the banks, whose soil being of the red tint communicated to it by the subjacent red sandstone, had given origin to its name. The only remnants of the last Redbraes, which in the front was a lengthened line of building, with a central peaked tower, are two back wings, one the kitchen department, now converted into the manager's house; and the other, the laundry, now constitutes part of the offices. The walls are of great thickness. In the intervening grassy area between these old Redbraes tower stood; the outline of the encircling moat being still traceable by a different colour in the grass. The old garden lay to the south; the sole remains of it are a yew fence, now grown into trees, with the roots densely intertwined; and a very luxuriant hedge of boxwood. The garden was a terraced one, in the style of a by-gone age, with rockeries and mazes, and abundance of fruit trees. All this arrangement has been altered, and the site planted over. On the removal of the house to a different position, about 120 years ago, and the new title of Marchmont adopted for it, the name Redbraes fell into disuse. It had been constructed of old red sandstone, similar to that at present wrought in the extensive quarry on the estate opposite Greenlaw. The new mansion is of a white sandstone. Some fragments of the old house bearing inscriptions have been preserved in the garden walls.

Everything about the garden and pleasure-grounds is well kept. While the ribbon style of bordering is the most prevalent, a goodly array of old perennial favourites have been preserved. The flowering borders appear to be usually made up of a yellow and a blue *Viola*; *Geraniums* of various colours; *Gladioli*; *Ageratums*; backed by a kind of white *Pyrethrum*. A considerable variety of good plants are cultivated in the greenhouses. The *Taxonias*, natives of Japan, are particularly to be noted, as we believe they were first flowered, and the fruit first reared to perfection at Marchmont. The fruit is yellow, like a small gourd, and edible. One, *Taxonia Van-Volkheimii*, placed in the centre of one of the houses, which is 60 feet long, spreads its arms, and fills both sides, crossing the house in an arch five

times. Other two species of *Taxonia* (one of them *Baumanniana*) are cultivated here; also a wide-spreading *Passiflora racemosa*, which flowers at all seasons. *Passiflora Bougainvillea* covers one half of a house; a large flowering *Heliotrope* was also very conspicuous.

There may be also noticed, *Euphorbium splendens*; *Lapygeria rosea*; a screw pine; *Hedychium Gardnerianum*, from South America; a new hyacinth-like plant (*Ophiopogon Jaburan*); two well reared climbing ferns (*Lygodon scandens*); many fine Maiden hair, golden and silver ferns, and a profusion of other sorts, very healthy and luxuriant. Aloes, Colias, Calidiums, Arums, Chinese Primroses, Fuschias, Double Petunias, and other decorative plants serve to make up the very interesting collection grown here. In one of the grape houses is a very productive Black Hamburg. At first it was grown in many divaricating branches spreading from a single central stem; but Mr Loney, dissatisfied with its bearing capacity, twisted round one of the under branches to the right, while another branch was retained that naturally spread to the left; by branches spreading from these the house is now crossed and filled; and the remarkable thing about it is, that the wood from the twisted feeder bears the heaviest and best bunches of fruit.

Of ornamental Coniferæ there are in the grounds outside the garden a *Wellingtonia gigantea*, 18 years old, feathered to the ground with branches; a *Pinus Douglasi*, with the top hurt; two *Araucarias*, whereof the finest, shews the severe winter of 1859-60, by the altered foliage of that year's growth. There are also *Deodars*, a *Pinus excelsa*, a *Picea Webbiana*, and a thriving *Cryptomeria Japonica*.

In the vegetable and flower departments this summer slugs have been excessively numerous, and it was found almost impossible to keep them in check.

A very fine old copper dial, of date 1726, behind the house, and a peculiarly grown larch standing there, already mentioned in the Club's "Proceedings," were hastily looked at, amidst the incessant rain. The material on the walks, which has been broken into fragments by a machine, consists of porphyry from Kyles Hill.

The house is an imposing structure, and has a stately appearance from the cross road in front of it; it is partially ornamented

with ivy. Little clumps of beech, faced with silver firs, break up the straight line of the extremely lengthened undulating grassy lawn in front, which is $1\frac{1}{4}$ mile long. Walks penetrate everywhere among the grassy sward and cool shade, underneath the lofty trees. On one approach there is a fine cathedral-like overarch-ing of giant branches of beech, and a dense gloom between the noble pillars, which increases to an intense darkness in a moon-less night; and then at a turn which terminates the vista, some pale barked trees present a very spectral look.

The members of the party were kindly received by the proprietor, and invited to inspect what was interesting in the house; Sir Hugh Campbell himself acting as cicerone, and shewing himself to be a man of most refined taste and highly cultivated mind. The chief attraction was the family portraits, which were very numerous (some 50 or 60), ranging from Sir Patrick Hume, the first Earl of Marchmont, and Grizel Kar, the first Countess, down to the present representative of the family. There were also many portraits of illustrious personages, and several paintings of interest, including many good copies, but these it is impossible to detail. There were also a number of busts, as well as statuary, porcelain, &c. In the dining-room there were two ancient "black jacks"—immense jugs made of one piece of leather, handle and all, and capable of containing from five to six gallons of ale. There was also a smaller one of similar material, called a "gill," which was silver mounted, and accounted rarer than the "jacks."* There are two libraries, one for modern and the other for older books. Among the latter are many old law books, and theological treatises, parliamentary records, and historical works. There were several editions of the Bible shown, one a Breeches Bible in small quarto; a

* The "Black Jacke" is mentioned in Brand's *Pop. Antiq.* ii., p. 206. It occurs in the song of "Now Ancient English Melody," &c., as "the coal black Jack;" and there is a song elevating it above the bottle in *Durfey's Pills to Purge Melancholy*, whose title is "The Bonny Black-Jack." It is one of the stage properties of Brome's "*Jovial Crew*," London, 1652. Other notices of it may be seen in Halliwell's *Dictionary of Provincial Words*, i., p. 181; and Wright's *Dictionary of Provincial English*, i., p. 217. The *Poculum Potatorium* in the family of Scott of Thirlestane (now part of the Cherrytrees estate) near Yetholm, was in the form of a *jack-boot*. Each guest was obliged to empty this at his departure.—*Sir Walter Scott's Notes to Waverley*.

Geneva Bible; the Marchmont Bible, with the name of "Madam Grisell Kar of Polwart, her Book, 1660," inscribed on a fly leaf. This was Sir Patrick Hume's spouse, afterwards first Countess of Marchmont. There was also a good old edition of Dante, and an old work in French, entitled "*La Mer de Histoires*," 1514, folio. A work that appeared to be very attractive to members was a copy of Watson's "*Philip II. of Spain*," done up in 2 vols. quarto, and illustrated with portraits of the celebrated personages of that king's period. There were suspended in the library, two letters in the handwriting of Charles the Pretender, the first written in 1760, and the other after his father's death, of date 28th June, 1766. There was also a holograph letter of Mary Queen of Scots. Another from Queen Anne, thanked Lord Marchmont for assisting in completing the Union of the two kingdoms. Letters are also preserved of the Chevalier de St. George, dated 1717; of Maria Antoinette, Queen of France, 1784; of Cromwell (no date), and of Cardinal Richelieu. There were also two bags used by Patrick, first Earl of Marchmont, when he was Lord High Chancellor of Scotland, from 1696 to 1702.

The bed was shown, which was slept in by Sir Patrick Hume, when concealed in the vault beneath Polwarth Church. It is a folding bed of wood, on four short legs, which also folded down by hinges when the bed was not required, and had strong springs to keep them erect when in use. The whole goes into very little space. The bed is of black walnut, and is in good preservation, but the castors, which are of beech, are worm-eaten and worn. The bed bears the date 1660.

About two hours were spent in examining the various articles of vertu and interest in the house, after which the party proceeded to see the ancient Church of Polwarth. Before leaving, the company were treated with refreshments.

Although of old foundation, the present walls of the church only date from 1703. On the outer walls are a number of inscriptions, chiefly to the memory of ministers of Polwarth. These have been copied, but it has been deemed advisable to defer an account of the church, as well as other particulars about Marchmont, which cannot be included within the compass of a report.

The following is a list of the Ministers of Polwarth from Dr

Hew Scott's "*Fasti Ecclesiæ Scoticanæ*," part ii., pp. 422-444, and Wodrow Society's *Miscellany*, p. 373 :—

Adam Hume, 1567 to 1593.

Robert Bell, reidare at Polworth, 1573.

David Forsyth, 1586 to 1592. Reidare at Coldingham, 1571.

Alexander Gaittis, A.M., 1593 to 1603.

Alexander Cass or Carse, A.M., 1604 to 1651.

David Robertson, A.M., 1652 to 1663.

George Holiwell, A.M., 1664-1704.

Archibald Borthwick, A.M., 1709-1727.

John Hume of Abbey St. Bathans, 1727-1734.

William Home, son of Walter Home of Bassendean, 1735-1757.

Alexander Home, 1758-1768.

Robert Home, 1769-1838.

Walter Home, Assistant and Successor, 1823.

On the 2nd Sept. 1296, after having paid homage to Edward I., Adam Lamb, parson of the church of Poulesworth, was restored to his benefice.* On August 2, 1299, Edward presented William de Sadyngtone, clerk to the church of Powelesworthe.† The inscription on the bell is : "GIVEN . TO . THE . KIRK . OF . POLWARTH . BY . LADY . GRIZEL . KAR . COUNTESS . OF . MARCHMOUNT . 1697 . R . M . FECIT . EDR . 1717."

In the vault beneath the church are contained on the left (1 and 2) the coffins of Annie Western, Countess of Marchmont, and the Master of Polwarth; on the right (3 and 4) those of Alexander 2nd Earl and Sir William Purves. Sir Patrick Hume, first Earl and his Countess, were interred in the Canon-gate Churchyard.

Outside of the church is an old rude font, recently found behind a wall at the back of the church. It has a perforation beneath, a hollow lip for the water running over, and about the middle two holes for the lid to play on. It is very ancient, and closely resembles that preserved at Linton. The churchyard is surrounded by large sycamores. The tombstones are white lichened, as if placed in a damp close atmosphere. From the old spelling I take the meaning of the word Polwarth to be *Paul's* village or hamlet; and not what Chalmers makes it the settlement on the *pol* or muddy stream.

Leaving Polwarth Church, the party divided. The majority passed along the walk through the open glen or vale by the

* Rot. Scot. i., p. 25.

† Documents Illustrative of the History of Scotland, ii., p. 378.

Swirden burn, called the Lady's walk, on their way to the Railway station. This was the path by which Lady Grizel Baillie (then Grizel Hume) used to visit her father at the dead of night, when he was secreted in the old church, owing to his life being sought after for his adhesion to Presbyterian principles, and his patriotic opposition to a tyrannical government. "She at that time," we are told in the narrative of her daughter, Lady Murray of Stanhope, "had a terror for a churchyard, especially in the dark; but when engaged by concern for her father, she stumbled over the graves every night alone, without fear of any kind entering her thoughts, but for soldiers and parties in search of him, which the least noise or motion of a leaf put her in terror for." The lime trees by the side of this hollow were already wearing the sear and yellow leaf—the lime leaf being one of the earliest to assume the autumnal hue. Greenlaw was reached by train. Another party returned to Marchmont House, and went to Greenlaw either by conveyances or on foot by the public road. Several of the hedges near Marchmont are composed of beech, which on this and the previous season, have been badly blighted by the beech Aphis, *Aphis Fagi*, L. (*Phyllaphis Fagi* of Kaltenbach), which by extracting the sap, withers the leaves. Several portions of hedge in a variety of situations, appeared to be quite dead. On the previous autumn this was pointed out by Mr Loney, and the winged insects, like little tufts of down, were floating across the roads, and were very troublesome by getting into one's eyes. At a recent meeting of the Scottish Arboricultural Society, at Edinburgh, on the 7th October, Mr C. S. France, Penicuik, suggested that a prize should be offered for an essay on the disease which was doing so much injury to beech hedges. In his neighbourhood the disease first appeared on the hedges in June last year, and this season it had entirely destroyed some portions of the hedges. In October, I passed a few days in the vicinity of Roslin, not far from Penicuik, and found the insect on nearly all the beech hedges by the public roads, some of them being deprived of foliage, in constantly recurring patches, like those at Marchmont. The disease is no great mystery, if one only examined the leaves at the proper period. According to Mr Walker, the viviparous wingless female, which is pale green or yellow, appears on the beech before the end of April; and the viviparous form in the middle of

May. The oviparous wingless female appears in October, when the winged male pairs with it. The eggs are fastened in November to the twigs of the trees. From June to October only a few little Aphides of retarded growth appear.* This insect differs from the *Coccus Fagi* which attacks the trunks of the beech, and covers them with a cottony layer. This *Coccus* has been observed at Ayton, and in the Edinburgh Botanic Gardens, and in Dalkeith Park.

Mr Loney also called attention to the damage committed by wood pigeons, to the growth of spruce and silver firs, by their custom of preferring to perch on their topmost branches, and breaking them down by their weight. On examination it was found that there were hundreds in this condition. Spruce firs, it is said, do not last here over 40 or 45 years; after that period they decay inwardly, the moist sandy soil being prejudicial to their welfare.

Before leaving Marchmont it must not be omitted to notice an immense blue basaltic boulder, estimated to weigh 14 tons, lying in the woods on the banks of the Swirlden burn. This had been turned up in an adjacent field in the course of cultivation, and dragged by horses into its present position. There are the scars of ploughs and harrows that have operated on it, at one end; and also a series of parallel lines at the base, which may be either structural or glacial, if they are not deceptive traces of moisture falling from the tree beneath which it has become a fixture. The dimensions of this boulder as taken by Mr Loney are—length, 10 feet; breadth, 5 feet; longest circumference, 23 feet 4 inches; across top and sides, 12 feet.

At Greenlaw several visited the church. At the entrance at the bottom of the kirk steeple, the cell of the more depraved prisoners, long known, when this formed a portion of the jail, as the "Thieves' hole," and "Greenlaw pit," was pointed out. In March, 1844, when the stair was made that gives access to the bell, a human skeleton was found between the top of the arch of the cell and the wooden floor above; supposed to have been that of some one murdered by his prison associates, and then concealed. A few of the more interesting inscriptions on the tombstones were copied.

To this meeting the Rev. Wm. Dobie brought from Ladykirk

* *Annals of Nat. Hist.* 2nd Series, 1848, pp. 328-330.

a pellet of quartz stone, covered with lead, of the size of a large marble, which had probably been shot from Norham Castle. Mr Currie produced a drawing of a necklace of jet taken out of a cist on the farm of West Morriston in 1846. This is a simpler ornament, although on the same model, than others figured by the Scottish Society of Antiquaries. Mr Watson handed in some notes on Sir Patrick Hume, and a list of the ministers of Polwarth Church; and he also exhibited a photograph of the portrait of Sir Patrick Hume, of which the original is at Marchmont, and drawings of the mansion house of Redbraes, of Marchmont House, and Polwarth Church. Mr Brotherston distributed examples of *Potamogeton Ziezii* from Coldside Loch; and of *Crepis succisæifolia*, which he had found in many places in Roxburghshire. *Scirpus pauciflorus* he stated to be not uncommon in Roxburghshire. Mr Watson brought a specimen of *Saxifraga hirculus* from the Langton habitat, so that it is fortunately still preserved.

About thirty gentlemen sat down to dinner in the Castle Hotel, Greenlaw. The following were proposed for membership:—Rev. George Gunn, Stitchell; Dr Patrick Kynoch, Greenlaw; Messrs George Anderson, manufacturer, Selkirk; Thomas Brown, Woodburn, Selkirk; Ralph Dunn, Melrose; Thomas Fairley, Academy, Galashiels; Robert Darling Ker, St. Leonards House, Edinburgh; William Laidlaw, Eastfield, Galashiels; Hume Nisbet, Studio, 6, Sandwich Place, Edinburgh.

A combined meeting of the Club, and the Architectural and Archæological Society of Durham and Northumberland, took place at Durham, on Wednesday, 24th September, which was very numerously attended by members of both Societies, upwards of 200 having been present at different periods of the day. The Rev. William Greenwell, F.R.S., F.S.A., President of the Archæological Society, gave in the Cathedral the history of the religious body which ultimately settled at Durham, and having detailed the chronological date connected with the fabric, in a very eloquent address, proceeded to point out the various architectural features of the church. After an interval of three quarters of an hour, Mr Greenwell conducted the re-assembled company to the Library, once the monastic dormitory and refectory, where the relics found in the grave of St. Cuthbert, and many valuable and early Manuscripts were inspected. The

company then adjourned to the Castle, where the Rev. Canon Ornsby, author of "Sketches of Durham," read a paper by Mr W. H. D. Longstaffe, F.S.A., which he supplemented from a paper of his own, that appeared in the Archæological Society's Transactions, and he afterwards conducted the company over all the apartments, and round the exterior, explaining their peculiarities most minutely. As a report of the addresses and observations made at the meeting will appear in the "Proceedings," it is unnecessary to recapitulate further. The arrangements were admirable, and every one appeared to be pleased. Many had to leave to reach home that evening, but about ninety ladies and gentlemen connected with the two societies, dined together in the great hall of the castle, Canon Greenwell officiating as chairman.*

Although no business meeting could be called, the names of the following gentlemen, duly proposed and seconded, were handed to the Secretaries, and were held as having fulfilled the conditions required of new-entrants, viz. :—Rev. Robert Small, Caddonfoot, Galashiels; Mr Frank Rutherford, Bank of Scotland, Galashiels; Rev. A. Duncombe Shafto, Brancepeth Rectory, Durham; Mr J. J. Vernon, F.S.A., President of the Hawick Archæological Society; Mr Robert Henry Elliot of Clifton Park; Mr J. W. Barnes, banker, Durham.

The annual meeting for 1879 was held at Berwick, on Wednesday, October 15. Among others present were :—Dr Paxton, Norham, President; Dr F. Douglas, Kelso and Mr J. Hardy, Oldcambus, Secretaries; Robert Middlemas, Treasurer; Sir Walter Elliot of Wolfelee, K.C.S.I., &c.; Mr Robert Crossman of Cheswick; Mr Matthew T. Culley of Coupland Castle; Mr David Milne Home of Milne Graden; Capt. David Milne Home,

* One of the great events in Sir Walter Scott's life, was his dining in this hall, with the Bishop of Durham, "surrounded and supported by the assembled aristocracy of the two northern counties, and in the presence of the Duke of Wellington." "The dinner was one of the finest things I ever saw; it was in the old Castle Hall, untouched, for aught I know, since Anthony Beck feasted Edward Longshanks on his way to invade Scotland." "The bright moon streaming in through the old Gothic windows contrasted strangely with the artificial lights within; spears, banners, and armour, were intermixed with the pictures of old bishops, and the whole had a singular mixture of baronial pomp with the grave and more chastened dignity of prelacy."—*Life by Lockhart*.

M.P., of Paxton; Revs. John F. Bigge, Stamfordham; William Dobie, Ladykirk; John S. Green, Wooler; Hastings M. Neville, Ford; John Orr, Berwick; John George Rowe, Berwick; Evan Rutter, Tweedmouth; Joshua Hill Scott, Kelso; R. Hopper Williamson, Whickham; Beverley S. Wilson, Duddo; Drs Colville Brown, Berwick; Charles Douglas, Kelso; Henry Richardson, R.N., Berwick; Capt. J. A. Forbes, Berwick; Messrs R. G. Bolam and George Bolam, Berwick; C. B. P. Bosanquet, Rock; Andrew Brotherston, Kelso; Thos. Chartres, Ayton; William Cunningham, Coldstream; Thomas Darling, Berwick; John Dunlop, Berwick; Charles Erskine, Melrose; James Greenfield, Reston; Henry Gregson, jr., Lowlynn; James B. Kerr, Kelso; R. D. Ker, Edinburgh; Geo. Muirhead, Paxton; James Nicholson, Murton; James Purves, Berwick; Stanley Hill Scott, Kelso; William Shaw, Gungahlin; Septimus H. Smith, Norham; William Stevenson, Dunse; Alan Swinton, Swinton House; John Thomson, Kelso; W. F. Vernon, Kelso; Charles Watson, Dunse; Matthew Young, Berwick.

At Mrs Carter's residence, among other interesting objects not previously viewed by members, there were MSS of Burns's "Lines written in Friars-Carse Hermitage," both versions; his "Literary Scoldings and Hints" with the originals of three of Burns's letters to Mr William Cruikshanks, of the High School, Edinburgh, which were exhibited by the Rev. James Henderson, vicar of Ancroft, the grandson of the poet's correspondent. Some of the readings in the letters slightly vary from the copies used by Allan Cunningham in his "Works and Life of Burns." The poet appears to have copied out for his more intimate friends, those pieces he had recently been occupied with; and hence there may be of some of them more than one example purporting to be an original. Of articles of local interest there were also to be seen there three sketches, of Etal, Langleyford, and Horncliffe Mill, by the late W. Wilson, jun., of Bridge Street, Berwick; and a continuation of Miss Dickinson's beautiful paintings of wild flowers, and the commencement of a series of moths with their caterpillars.

At one o'clock the members met in the billiard-room of the King's Arms Hotel, for the transaction of business. Dr Paxton delivered his address, and nominated Mr Charles Watson, Dunse, as his successor. Mr Hardy read the Reports of the various

meetings for the year; and the treasurer, Mr Middlemas, stated that Mr Kerr had audited the accounts and found a balance of £12 8s 8½d in favour of the Club.

Sir Walter Elliot read an article on the Objects of the Club, in which he impressed upon the members the advisability of systematic action in scientific and archæological research. It was resolved to appoint a committee to carry out some of Sir Walter Elliot's suggestions.

Mr James B. Kerr read a paper upon some verses written by Sir Walter Scott, in 1832, while residing in Rome, which are believed to have been the last ever written by the poet. Mr Kerr produced the original manuscript, which is written in a very feeble hand; as also a passport for Sir Walter Scott, signed by Prince de Polignac, the French Ambassador in London, and dated 25th October, 1826. This passport bears Sir Walter Scott's own signature and address, viz., Hotel Windsor, Rue de Rivoli, No. 38. Another document shewn was a diploma of the Society of Antiquaries of Normandy, in favour of Sir Walter Scott, Bart., President of the Royal Society of Edinburgh, and dated A Caen le 19 Janvier, 1829, and bearing the signatures of Le President, Le Secretaire, le Secretaire adjoint, &c.

Dr Francis Douglas said that the Club was under great obligations to the Northumberland and Durham Archæological Society at the meeting at Durham last month; and he thought it was only due from them as recipients of the generosity and liberality of the Archæological Society, that the kindness of the sister society should be put on record. He hoped that an opportunity might soon occur when the Berwickshire Naturalists' Club might meet them, and make some return for the favours received. His motion was cordially adopted.

Some discussion next ensued as to the proper place for the deposit of the books and pamphlets received by the Club from other societies, but nothing definite was resolved upon.

The following were proposed as members of the Club:—Mr Ralph Patterson Nisbet, Chesterhill House, Belford; Mr George Bolam, Berwick; Rev. Thomas S. Marjoribanks, Prestonkirk, East Lothian; Rev. James King, vicar of St. Mary's, Berwick; Mr James Bogie, 5, Spence Street, Newington, Edinburgh; Rev. Alexander Milne, Swinton; Mr Francis D. Blake of Tillmouth Park, Coldstream; Dr Andrew P. Aitken, Dr. Sc. Nivelle

Cottage, Liberton, Edinburgh; Mr F. Bamford, Edenbank, Kelso; Mr James Thomas Spencer Elliot, yr., of Wolfelee; Mr W. G. Macdonald, Grammar School, Berwick; and Dr Thomas Rutherford, Kelso. These along with the others proposed at the different meetings throughout the season, were admitted as members.

The following were the places in which it appeared to be desirable to hold meetings during 1880; but as there would be difficulties in carrying some of them out, alternatives were likewise proposed:—Dunbar for Woodhall and Thurston Woods, on the last Wednesday in May; Gordon, or Longformacus in June; Belford or Beadnell in July; Morpeth for Newminster Abbey and Mitford in August; Gilsland in September.

Several highly interesting articles were exhibited to the meeting. Dr Francis Douglas brought a small green glass phial, conjectured to be Roman, discovered in digging for the foundations of the Public School at Kelso, of which he will give an account. Mr Milne Home produced a chipped spear-head of pale grey flint, like the material of one already figured for the Club, which he had obtained from one of the Earl of Home's gamekeepers, who had picked it up in a rabbit-hole near Fireburn Mill, opposite Carham. Sir Walter Elliot, to illustrate his remarks on local archæology, referred to a variety of specimens, which were handed round. 1. A very fine fully polished light grey flint celt, got at Wolfhopelee, on Wolfelee estate. 2. A very perfect example of a chipped brownish-grey flint arrow-head, picked up near the Drove Road, not far from Wolfelee, in 1862. 3. A wrought flint chip, from a gravel walk at Wolfelee. 4. A small stone ring, or rather bead, of greywacke slate, like one already figured for the Club, found at Wolfelee Townhead Cottage, by the shepherd's daughter, in August, 1879. 5. Two distaff spindle weights; the one met with at Braidhaugh, at the foot of Bonchester, in 1871; and the other at the Chester on the Roundabout farm. 6. An oval stone of a grey quartzzy mixture, a sort of bastard sandstone, which had a groove and dimple lengthways to the stone; about the size and form of a small hammer-stone.—This was from a field at Braidhaugh, at the foot of Bonchester Hill. 7. An Egyptian copper arrow-head from Thebes, March, 1863. 8. A flint arrow-head picked up on the

tombs at Marathon, September, 1834. 9. A bone arrow-head found among the bones of Deer, Wild Boar, and Ox, in a rath on the estate of John Pullar, Esq., C.M.G., Tipperary.

Mr George Bolam informed the company that this week he had shot a Pied Fly-catcher (*Muscicapa atricapilla*) in his father's garden at Berwick. Dr Colville Brown exhibited three Pomarine Skuas (*Lestris Pomarinus*), shot that day, Oct. 15. This is a species of unusual occurrence, but owing to a storm or some occult cause, about that period, great numbers of these birds had been driven from some high latitude, upon the eastern coasts of Britain. Mr George Bolam obtained information that on the 14th Oct., one man at Spittal shot no fewer than 15; and other persons killed 4 or 5 each. Mr Knight got two at Holy Island. It was still more plentiful up the Frith of Forth. Mr Gray had examined 32 specimens in Edinburgh, besides 3 or 4 *Lestris Buffoni*, which appears to have arrived in company with the Pomarines. Mr Harvey Brown writes that about that period, Buffon's Skuas had occurred in the Moray Frith; and that he had heard of 26 Pomarine Skuas in three weeks in the Frith of Forth; and many others elsewhere on the eastern coast. In England it swarmed in the end of October and in November. In a paper read to the Royal Physical Society of Edinburgh, Dr Traquair recorded that in October and November specimens had been shot at Dunbar, Longniddry, North Berwick, Portobello, and Queensferry; as well as at Dundee and North Uist. The birds were generally in a state of exhaustion, and were very tame. In the beginning of October large numbers were observed in the Faroe Islands.

The Club have deeply to regret the death of several of its oldest members, as well as of others in the prime of life:—1. Mr Ralph Forster, of Whitsome Hill, Berwickshire, who died at Rome, 17th February, 1878, in the 44th year of his age, whose mortal remains rest in the Protestant Cemetery there. 2. Lieut. James H. Scott Douglas, Springwood Park, a youth of great promise, slain while on duty in the Zulu war as signal officer of Lord Chelmsford's army, at the age of 26, July 1, 1879. 3. Mr William Richardson, Alnwick, a zealous botanist, and the discoverer of several rare plants in North Northumberland, who died 18th April, 1879, in his 80th year. 4. Mr James Maid-

ment, advocate, a distinguished literary antiquarian and genealogist, who died at his residence in Royal Circus, Edinburgh, on the 24th November, 1879. He joined the Club in 1859. 5. The Rev. John Dawson, minister of Makerston, who died suddenly, 1st December, 1879, aged 47. He officiated for many years in India as an army chaplain. 6. In the same fatal roll we have to inscribe our friend, and the Club's friend, Mr John Clay, who was cut off suddenly at his residence in Ravensdowne, Berwick, January 26, 1880, in his 50th year. Mr Clay joined the Club, October 28, 1857. 7. The Rev. J. S. Green, vicar of Wooler, who died February 15, 1880, who joined the Club May 31, 1860, and for that long period was almost a constant attendant on the meetings. Mr Green had attained his 65th year. Of Scottish descent he was born in Huntingdonshire, and was educated at Cambridge, where he took the B.A. and M.A. degrees. He was formerly curate at Stockton and Bishop Auckland, and in the year 1842 he was appointed rector of St. Mary-le-Bow, Durham. 8. The Rev. Charles Thorp, vicar of Ellingham, died at Ellingham vicarage, 17th February, 1880, in his 55th year. He was the son of the late Ven. Archdeacon Thorp, Archdeacon of Durham and Rector of Ryton. Educated at University College, Oxford, he took the degree of B.A. in 1850, and the degree of M.A. in 1853. He was ordained in 1850; and became vicar of Ellingham in 1855, prior to which he was curate of Blanchland. Since he became vicar the church has been completely rebuilt, and it is now one of the neatest country churches in the North of England. New and handsome school buildings have been erected, and lately, through his instrumentality, a substantial house was built for the schoolmaster. Mr Thorp became a member of the Club, Jan. 31, 1856.

ADDITIONAL NOTICES.

From a memorandum made in 1845, it appears that the giving of a field for a horse was not singular on the parts of the lairds of Hillend and Houndwood; but that a similar bargain was made between the lairds of Fairneyside and Redhall, both of which farms are contiguous; the former having given a field of Fairneyside to the owner of Redhall, as the price of a hunting-

horse. At one period the lands of Fairneyside and Houndwood belonged to the same proprietor ; and it is possible that the two exchanges form a part of one transaction ; or at least that the one or other might afford a precedent.

I have found, after the first portion of the report had gone to press, the original notice of the discovery of the urn near Houndwood, in the *Berwick Advertiser*, October 9, 1868, and it is advisable to preserve what the finder says about it. "On Saturday last (October 3) whilst the workmen, who are at present engaged in removing a sandbank at Houndwood Lye for ballast for railway purposes, came upon an urn filled with human bones. It is 15 inches deep, and 12 inches wide, is formed of coarse baked clay, and is in very good preservation. The bones have a charred appearance, and when exposed to the air crumble down. This is the sixth of the same sort that has been found near the same spot, but those formerly found were so much damaged that they could not be removed."

Misled by Mr Riddell-Carre (*Border Memories*, pp, 252, 253) I have mis-stated both the Christian name and the date of the decease of the eminent medical descendant of Henry Hall of Haughhead, on the Kale. The authenticity of the obituary notice in Constable's *Edinburgh Magazine*, vol. xiv., p. 640, may be more relied on. "April 24, 1824, at Chelsea, Robert Hall, M.D., late Surgeon to the Forces, a descendant of the ancient Border family of the Halls of Newbiggen [Parish of Oxnam], and great grandson of Henry Hall of Haughhead, the celebrated Covenanter, who fought at Bothwell Bridge, Drumclog, &c."

An Address on the History of Durham Cathedral, delivered at the joint Meeting of the Berwickshire Naturalists' Club and the Archæological and Architectural Society of Durham and Northumberland. By the Rev. WILLIAM GREENWELL, F.R.S., F.S.A., President of the Archæological and Architectural Society of Durham and Northumberland.

I propose to divide what I have to say into three parts, the first commencing with a brief account of the earliest introduction of Christianity into the North of England, bringing the history down through the period before there was any religious establishment at Durham, and from thence to the time of the Norman Conquest and the establishment of the Benedictine Order at Durham. After that I will give in detail the facts from history which have relation to the erection of various parts of the Cathedral, and then I will accompany you through the building, and endeavour to show how the architectural features of the several parts tally with the historic data previously given you.

With regard to the first establishment of Christianity, I do not think there is any evidence to show that it had taken root during the time of the Roman occupation. We know that there is abundant evidence that Christianity did exist in various parts of England, but I am not aware that there are any facts which would enable us to say that Christianity was established here in the North of England, at all events, to any great extent. There may have been isolated instances of Christians, but that they were few seems to be shown by the fact that all the inscriptions upon the Roman stones down to the latest period of the Roman rule are Pagan.

As I proceed, I shall have to bring before you a number of great figures, men of extraordinary eminence, capacity, and religious zeal in their several times and places. The first of whom I have to speak is Paulinus, the great missionary of the North in the very earliest time. He preached throughout all this part of the ancient kingdom of Northumbria, in which is comprised the present counties of Northumberland, Durham, and Yorkshire, together with a large portion of South-Eastern Scotland, up to the Frith of Forth. There are several places well known to many of you where he preached and baptised with great success, one of which, Pallinsburn, near the later

site of the Field of Flodden, appears to have got its name from him. The Swale and the Glen are rivers associated with his mission, and his well at Holystone, in the valley of the Coquet, where he baptised, is familiar to us all. He was obliged, A.D. 633, to leave the country, when, after the death of Eadwin, slain in the battle of Hethfeld, Northumbria was conquered by Penda king of Mercia, and Cadwallon king of the Strath Clyde Britons, and relapsed with its two kings into Paganism. I now come to one of the greatest names of Northumbria—Oswald, who is intimately associated with the Church of Durham, in connection with its patron, Saint Cuthbert. A son of Aethelfrith, of the royal house of Bernicia, he fled from his country, when a youth, and took refuge in Scotland, where he became a convert to the Christian faith. On his return to his own country, after defeating and killing Cadwallon at Hevenfield, near Hexham, he was the means of introducing Christianity into it. I shall now have a few words to say with regard to the place from whence Northumbrian Christianity came. I refer to Iona. Iona, which many of you will know, is a small, low-lying, sterile, inhospitable island upon the west coast of Scotland, and the last place likely to be selected for a residence. This place, however, was chosen by a great Irishman, descended from one of the lines of Irish kings, his name Columba. He was a man of enormous energy, and would have made an admirable commander and a great soldier, had his energies been turned in that direction. The early part of his life was intermixed with the feuds then prevailing, and he was the cause of much bloodshed, and was compelled in consequence to leave his native country. An exile from all he loved, he came to Iona, and there settled, and never returned to Ireland, which was so dear to him, and for which through life he longed. He lived at Iona, and there founded a great missionary church, and from thence the Christian faith was diffused through a considerable part of Scotland. There were other centres from which the Christian faith spread in that country, but we must look to Columba as the origin, and to Iona as the great centre and source of Christianity in Scotland and the North. We can never think of Iona without a deep feeling of veneration and regard, and no Scotchman can visit or speak of it without strong emotion. Iona will always live in the memory of Scotland. Scotland, narrow perhaps in some things, harsh it may be in

others, looks ever with reverence upon Iona, and her great heart beats with a fervent throb at the name. I know not of any country in Christendom more imbued with stronger religious feeling and more fervour than Scotland, and doubtless she owes much of it to St. Columba and his island home. Here, in Durham, too, and throughout all the North of England, we cannot but look to Iona with veneration, for it is impossible to do so without feeling that from it was extended to us Christianity and civilization. To recur to Oswald. After the defeat of Cadwallon, Oswald then became firmly seated as king of Northumbria, and immediately afterwards he sent to Iona for help in his endeavours to convert his people to Christianity. Iona responded to his call, and gave him at first Corman, who failed, however, in his mission on account of his too great harshness. A monk named Aidan at once supplied his place, and amply fulfilled the expectations that had been formed of him. After Paulinus' departure Christianity had disappeared from Northumbria, and it remained Pagan until Aidan's arrival. We know a good deal about Aidan, and all we know shows that he was a man of great religious vigour and zeal, and also of admirable tact. Beda tells us much about him, and though not an altogether friendly witness, on account of the differences about the keeping of Easter and the tonsure, he speaks of him in terms of the highest praise. Oswald, with whom he was most intimately connected, the king often acting as interpreter when the Bishop preached, fell in battle A.D. 642, at Maserfeld, probably near Oswestry, in Shropshire, in fighting against Penda, the old Pagan king of Mercia, who had conquered Northumbria before the time of Oswald. He defeated Oswald and slew him, using great barbarity. He cut off his hands and head. His head ultimately came to Lindisfarne, and ever after became associated with St. Cuthbert. We always hear of them together, St. Cuthbert being usually represented as carrying king Oswald's head, which was buried with him at Lindisfarne, and ultimately at Durham. Perhaps it may not be here out of place to say a few words with regard to Ireland as a centre, not alone of Christianity, but of art. It is entitled to our respect not only on account of our Christianity having been introduced from it through Iona, but for other reasons about which I have to speak. Ireland was one of the great centres of missionary work, and sent missionaries over a

large part of Europe, throughout the seventh, eighth, and ninth centuries. It was also the country whence art at that time was widely diffused. The art which we are accustomed to call Anglo-Saxon, and which is sometimes known as Runic, is purely Irish. Almost all the art ornamentation in use at that time in our own country upon stone and metal, and in books, came from thence. Into the principles of this art time will not permit me now to enter fully. It has nothing in common with Classical or Oriental Art, and does not appear to have been known anywhere except in the United Kingdom, and to a trifling extent in some parts of South Germany. In Ireland, however, this special art ornamentation reached its highest excellency. The power of design and of execution, as shewn in the manuscripts, is truly most remarkable. This principle of art is in the main based on a spiral reversing itself, which becomes joined on to an elaborate interlacing pattern, probably originating in late Roman work. This union produced that wonderful system of art ornamentation which is found so beautifully developed in many of the early books, written both in Ireland and our own country, and in none more exquisitely than in the Lindisfarne Gospels, which, once at Durham, is now in the British Museum. We have also in the Library here another very fine example, consisting of a fragmentary copy of the Gospels, equally beautiful with the Lindisfarne Gospels.

When Oswald placed Aidan at Lindisfarne (now called Holy Island) or more probably when Aidan selected that spot for a religious settlement, he found it singularly like the place from whence he had come. It is a small low-lying, sandy, and unfertile island, not far distant from the mainland. Both Lindisfarne and Iona are exposed to the storms from the ocean, and to those of the opposite highlands, and in many respects are much alike, and I cannot but think that Aidan was induced to settle at Lindisfarne from a sentiment of affection, because of this likeness to the island where he had received his education, and where he became so deeply imbued with a true Christian spirit. The religious body established at Lindisfarne by Aidan was fostered by that great and most virtuous of kings—Oswald—and there the monks remained for several years. But before I bring you away from Lindisfarne, to Chester-le-Street and Durham, there is one figure which rises before us—the figure of the great

Saint of the North of England, our patron Saint at Durham—Cuthbert. His genealogy is disputed, but there is little question he was of Anglian and not of Celtic origin. He was probably of humble parentage, although a noble descent has been claimed for him. We hear of him first as a shepherd boy in the South of Scotland, not far from Melrose, the monastery at which he entered, and there received instruction in religion. He ultimately became a great missionary, and preached throughout a large part of Northern Northumbria, then comprising the East of Scotland up to the Frith of Forth. He became Bishop much against his will, and had he chosen his own lot he would not have ruled over the Northumbrian See, but have lived on in retirement from human kind as a hermit upon the adjoining island of Farne, to which he had before removed from Lindisfarne. I cannot but think that he must have had other qualities than the ascetic which induced the people to select him. We know that he was a great missionary, and that he preached with much effect, but he must also, like Aidan, have had a conciliatory spirit, kindness, firmness, discretion, and the skill to rule. He became Bishop at Lindisfarne A.D. 685, and died on the great Farne A.D. 687, and his body was taken to Lindisfarne, and there buried. He, therefore, only ruled the Northumbrian See for two years. Eleven years after his death his body was disinterred, the monks having, in the meantime, prepared a coffin in which to place it. They naturally expected to find a skeleton, but they found the body incorrupt. They then placed it in the coffin which they had prepared, and, probably with the exception of coffins from Egypt, this is one of the oldest wooden coffins, of which remains still exist. Fragments of large portions of it are still preserved in the Cathedral library. Reginald, the author of a “*Life of St. Cuthbert*,” who had opportunities of carefully examining it, says it had on it representations of Saints, Apostles, and of various other figures. Many of these still remain on the fragments of the coffin at Durham, and the description given by him so fully agrees with the character of the sculpturing still left, that there cannot be the slightest doubt that in these remains we have portions of the coffin made before A.D. 698. The letters, for some of the figures have the names attached, are also of the form in use at that time.

I must now mention another great name—that of Beda, or the

Venerable Beda, as he is commonly called. He wrote a "Life of St. Cuthbert," and he therefore becomes very intimately connected with the great Saint of the North. Beda was a man of high attainments and culture. He was not, perhaps, a man of action, and I do not know but that he passed his whole life more or less in seclusion, not mixing in the world. He was emphatically a student, and remarkable for great personal religion. He is, indeed, an instance of, for his time, extraordinary learning, much simplicity of life and character, and of eminent and unselfish piety. Who is there that can read the account of his parting moments, and the story of his death without emotion? I think there can be nothing more affecting. He was a great writer, and second to none as an Historian. His history contains, no doubt, many things which modern investigation have shewn to be incorrect. That arose, however, not from any fault in his own mind, but because the data did not then exist from which he could draw his facts. As an historian, he may almost stand side by side with Herodotus. He was also a great theologian, and indeed was well versed in every branch of literature then known. He was truly a great man, and amongst the most eminent of the scholars who lived at that time. We possess at Durham not only the bones of Cuthbert, but also of Beda. You will see the tomb which encloses them in the Galilee. He died at Jarrow, in A.D. 735, and was buried there. There lived, however, in the monastery at Durham, a monk, Elfred, who was greatly attached to the memory of St. Cuthbert, and who had charge of his body. He thought that two such men should rest together. Can we blame him for his wish, or for the way in which he attained its fulfilment? He took an opportunity of carrying off the body from Jarrow, and removed it to Durham, and here it still remains.

I must now pass over a considerable period, and come to the year 875, when our connection with Lindisfarne ceases to a certain extent. At that time the great Scandinavian invasions were beginning to take place, and, among other places, the Danes landed upon the coast of Northumbria, and harried the country. The monks fled from Lindisfarne. I mentioned before that I thought Lindisfarne had been selected by Aidan because of its great resemblance to Iona. I think there was probably another reason,—its neighbourhood to the Castle of Bamburgh, the seat

of the Northumbrian kings. Lindisfarne is very near to it, and naturally would be under the protection of the king, who lived there. Bamburgh, however, proved no great protection against the Danes, who came over the sea, and landing on the coast, then over-ran the country. The monks fearing lest they would be deprived of the Saint's body and their other treasures, and of their lives as well, fled from Lindisfarne, and wandered, not only over a great part of the North of England, but over a considerable portion of the South of Scotland; and many churches dedicated to St. Cuthbert, in those parts, probably mark the spots where the monks rested for awhile, with the body of the Saint. After wandering from 875 to 883, they settled at Chester-le-Street, which was given to them by Guthred, a Danish king, then reigning in Northumbria, and who had become a Christian. Chester-le-Street, unlike Lindisfarne, is inland, and stands upon the site of a Roman station. It possesses no great natural features for defence, but it is likely that some considerable remains of the old Roman walls were standing, and served as a protection against these Northern Rovers. There are a few remains of the monk's sojourn at Chester-le-Street, in the shape of portions of shafts of crosses, which are covered with that peculiar carving which I have already referred to as of Irish origin. There the body rested, and from it the Bernician See was ruled, until the removal of Bishop Ealdhun and the monks to Durham, in 995. The difficulties of an adequate defence probably proved to the monks that Chester-le-Street was not a suitable place for protection. The superior position of Durham was, no doubt, the reason why it was selected for the site of the See. This then was the commencement of the City of Durham.

The site chosen for the final resting-place of the body of the patron Saint of Durham, is a plateau, small in extent, but enclosed by precipitous banks, and having the river running almost entirely round it. So strong, indeed, is its position that in those days it was, in fact, all but impregnable.

In 999, Bishop Ealdhun completed the building of a stone church, into which the body of St. Cuthbert was transferred from a wooden building in which it had been at first placed. Of that church I do not know that a single stone remains visible to the eye, though there are, no doubt, thousands of stones belonging to it enclosed within these walls. This building remained

until after the Conquest, a great change having taken place in the meantime. The monks who had originally constituted the congregation of St. Cuthbert, had fallen from the rule which was at first observed. There was in those days a great tendency among the regular clergy in the Saxon church, to degenerate into a kind of secular clergy. Symeon says those at Durham were neither monks nor regular canons. At Durham, as at Hexham, and elsewhere, they were married, and had families, and there was rapidly springing up an hereditary priesthood, father succeeding son, and had that system gone on there would have arisen a sacerdotal caste, with all the evils attending such a body. The Norman conquest happily did away with that, as it did with many other abuses. I incline to think that some indications of such a state of things were discovered, when about three years ago the foundations of the east end of the old Chapter-house, which was so ruthlessly destroyed in 1798, were laid bare. Just outside of the east wall of the present Chapter-house the graves of Bishops Flambard, Galfred Rufus, and William de St. Barbara were met with, and in them were found three Episcopal rings of gold set with sapphires, which I will show to you in the Library. Much to our surprise, below the level of the Bishops' graves there were found a considerable number of skeletons of men, women, and children. There can, I think, be little doubt that the remains found at a lower level than the graves of the Bishops, those skeletons of men, women, and children belonged to the married clergy and their families who occupied the monastery at Durham, from the time of Ealdhun to the time when they were dispossessed by Bishop William of St. Carilef. I have already alluded to the congregation of St. Cuthbert, but of that body I must give you some further account. The religious community, the congregation of St. Cuthbert, which ultimately settled at Durham, included the Bishop and the monks. The two formed one body, whose interests were identical, and the Bishop lived among the monks, over whom he ruled within the community as he ruled over the diocese without. This system went on at Durham until the establishment of the Benedictine order shortly after the Norman Conquest. This unity between the Bishop and the monks was very similar to that which prevailed in the religious communities in Ireland and Scotland. The Bishop was a member of the body and lived

within it. He had no estates or means of subsistence apart from the whole community. His interests and those of the rest of the congregation were one. This state of things was altered, as I have said, after the Conquest by Bishop William of St. Carilef, who was the second Bishop appointed by William the First. Walcher, the first Norman Bishop, having reigned only a short time when he was killed by his own people at Gateshead, during a rebellion caused by the oppression of his officials. In 1081, William of St. Carilef was made Bishop. He was a Benedictine brought up in one of the great monastic houses in his own country, Normandy. Naturally enough, such an establishment of married clergy as that he found at Durham, must have been most distasteful to him. He had been a Benedictine monk himself, and he therefore preferred being surrounded by those of his own order and not by those of whose system he disapproved. In the time of Bishop Walcher, the ancient monasteries at Jarrow and Wearmouth were deserted. Both of these churches still contain parts which are probably as old as any in this country, and I would strongly urge any of you who have not already been to Jarrow and Wearmouth, to visit these two places, which possess the highest interest whether they are regarded ecclesiastically or with reference to their architectural features. They had been deserted by the monks in consequence of the Danish invasions. It is difficult to say how long they remained without inhabitants, but they were probably more or less occupied during the interval. However this may have been, Bishop Walcher placed there Benedictine monks from Winchcombe and Evesham; and Bishop Carilef, thinking there were not sufficient means for the maintenance of more than one monastery, brought the monks from Jarrow and Wearmouth to Durham, and founded a Benedictine house here, but before that he had dispossessed the secular clergy. At that time the Church of Ealdhun was still standing, and it is uncertain whether Carilef determined from the first to build a new church for the new order. He became a party to the rebellion against William Rufus, in 1088, and was driven an exile for three years into Normandy, and there, it may be, he conceived the design of replacing the old church by a new and more magnificent building, and it is possible that he may have brought with him, from that country, the plan of the very church in which we are now met.

Normandy at that time was full of splendid churches, many lately erected, and it is probable that the thought may have passed across the mind of Carilef, that if he did return to Durham, he would raise there a more glorious building, and one better adapted to the wants of the new community, than the church he had left behind him. At all events on his return he determined to build a new church, and may we not think that gratitude was the motive which induced him to do this. In the meanwhile, during the time of his exile, as we learn from Symeon, the monks built the refectory, as, says he, it now stands. Symeon lived in the early part of the twelfth century. He therefore speaks with authority. The crypt under the refectory which still exists cannot be later than Symeon's time, and must, therefore, if not a still earlier piece of work, be part of the refectory built during Carilef's exile, and is therefore the earliest building we have at Durham in connection with the Monastery.

I now come to the second part of my address; you will ask what authority I have for the statements I shall make with regard to the dates of the various parts of the church. I have already stated that Symeon, a monk of Durham, lived when a great part of the work at the church was going on, and therefore his testimony is very important. His history was continued after him by an anonymous writer; and then we have a further continuation by Geoffrey de Coldingham, Robert de Graystones, and William de Chambre, together with a number of indulgences from various Bishops, given towards obtaining means for making alterations in the building. These form our series of historic evidences.

In 1093, on the 11th August, the foundation stone of the new church was laid. There were then present Bishop William of St. Carilef, Turgot the Abbot, and, as another writer says, Malcolm, king of Scotland. If he was present, it is curious that Symeon does not record the fact. The building went on rapidly. The Bishop had been accumulating money for his new church, and he carried on the building of it as far as the first large pier in the nave. The death of Bishop Carilef took place in 1096, and an interval of three years elapsed before the election of Bishop Flambard, in 1099, who is described as great by some and infamous by others. Ralph Flambard was William Rufus' Chancellor, and whether he was infamous or not, he was anyhow

a remarkable man. We are told that he carried on the work of the nave up to the roof—that is, that he completed the nave as far as the vaulting. In the meantime, between the death of Carilef and the consecration of Flambard, we learn that the monks went on with the church. There had been an agreement between them by which the Bishop undertook the building of the church, and the monks of the domestic parts of the monastery, but that agreement came to an end on Carilef's death. That part of the church which was built by the monks there can be no doubt was the west side of the transepts, and the vaulting of both. We are next told that after the death of Bishop Flambard, in 1128, in the interval before the accession of Bishop Galfred-Rufus in 1133, the monks completed the nave. There was nothing left to complete but the vaulting, for Flambard had finished the nave up to the roof. With this date, about 1130, the architectural features well agree, notwithstanding the pointed arch of the main ribs. I may here take the opportunity of saying a few words with regard to the original vaulting of the choir. It was very common in Norman churches to have a wooden ceiling without any groined stone roof. This, however, was not the case at Durham, where a stone vaulting was placed over the choir almost immediately after the completion of the walls. There is sufficient evidence of this from the marks still left on the walls of the cloistery, but we have also the evidence of historic relation. In 1104 the building was so far completed that the monks were enabled to transfer the body of St. Cuthbert from the small building in the cloisters, where it had before remained, to the Shrine, at the east end of the choir. At that time a very remarkable event took place, as we learn from William of Malmesbury's "*Gesta Pontificum*." He tells us that the wood work supporting the roof over the shrine was still there, which implies that the stone vaulting was only lately completed. He says there was a difficulty as to getting down the wood work before the body of St. Cuthbert was placed in the shrine. St. Cuthbert, however, came to the assistance of the monks, and knocked the whole down during the night, and on the following morning it was found spread on the floor without having done injury to anything beneath it. Galfred Rufus was the next Bishop, and reigned from 1133 to 1143. We are told that the Chapter-house was completed by him. Possibly it may

have been begun before his time ; but, at all events, it was then finished. The Chapter-house ! alas ! I can scarcely say Chapter-house, for it is now only a miserable remnant of a building once probably the finest Norman Chapter-house in England. It was barbarously destroyed at the end of the last century ; why, I cannot tell, except as it is stated, to make the room warm and comfortable for the members of the Chapter. The Galilee was nearly destroyed at the same time. Fortunately there is a very beautiful doorway still left in the Chapter-house, which may be attributed to Galfrid Rufus, who also probably built the great north and south doorways of the Nave. The sculpturing upon these doorways, and that upon the figures which supported the ribs at the east end of the Chapter-house, have apparently been done by the same hand. The Episcopacy of William de St. Barbara, so far as we know, was not marked by any important work. We then come to a great builder, Hugh de Puset, or Hugh Pudsey, as he is generally called, a nephew of king Stephen, and a son of the Count of Bar. He was young when he became Bishop, and during his long Episcopate, a number of works were effected by him. He had two architects, Richard and William, "*Ingeniatores*" as they are called, and about one of them, Mr Surtees, the historian, has made a curious mistake. He took *Ingeniator* to mean Snarer or Poacher, and describes Ricardus *Ingeniator* as Dick the Snarer, instead of which he was an important land owner in the county, holding a considerable estate, the reward doubtless of his skill as Pudsey's great builder. Bishop Pudsey, we are told, began to build a Lady Chapel at the east end of the Cathedral. He caused marble columns and bases to be prepared for it, which came from beyond the sea. These still exist in the Galilee, and are made of Purbeck marble. The meaning of "*beyond the sea*," no doubt, is that they were brought by sea to Newcastle from Dorsetshire. He commenced building, but as the work went on cracks began to appear in the walls, and Pudsey thinking the work was distasteful to God and St. Cuthbert, left off building there, and transferred the chapel to the west end, where it still remains, a most beautiful specimen of twelfth century work, and shewing how great was the taste and skill of Pudsey's architect. There can be little doubt as to the cause of the shrinking. The Cathedral at the west end is close to the rock ; whilst at the other

end the soil is deep, and in places of a peaty nature. The old builders cared little about the foundations, they frequently planted the walls upon the surface, and thus, when the soil was of a compressable nature, shrinking of the walls was apt to occur. From the same cause that affected Pudsey's work, the east end of Carilef's choir began early to shew signs of instability and became ruinous.

Though we have no record of the builder or of the date when it was built, it is certain that the outer part of the south-east doorway of the cloisters is of the time of Pudsey. It is a characteristic work of his and very rich in its details, although not perhaps so beautiful a specimen of late twelfth century work as the doorway of Pudsey's great hall in the castle. From the time of Pudsey we have no account of any work done until Bishop Poore (1220-37), and to him has always been attributed the building of the Nine Altars, probably from the fact that he began to make preparations for it. It was not commenced until after his death, when in 1242, Prior Melsanby began to build. Poore had been a great builder at Salisbury before he came to Durham, and he must always have the credit of the intention, if he did not live to carry out the building of the noble specimen of 13th century architecture we see in the Nine Altars. Some-time before his Episcopate cracks had begun to appear at the east end of the church, and we have a number of indulgences, some of them going back to an early period, and one coming down as late as 1278, granted by various Bishops in aid of the new work. Following upon the building of the Nine Altars was the replacing of the original Norman groining by the present roof, which may be attributed to about the year 1300, and is a good example of early decorated work. Prior Thomas of Melsanby (1233-44), who commenced the building of the Nine Altars, had been elected Bishop by the monks, but was refused by the Crown. He was one of the greatest men who have sat in the Prior's chair at Durham, and to him must be given much of the credit of that beautiful building the Nine Altars. I am sorry I am not able to tell you the name of the architect. It is very rarely that the name of any of the mighty builders of old has been preserved. They did not care that their names should be handed down to posterity. They were content to build, and leave the work and not their names to speak. I once came

across the name of the architect of the new work, as the Nine Altars was called, as a witness to a conveyance of some land near Durham. The date of the deed was of the time when this chapel was building. I neglected, unfortunately, to make a reference to the deed, trusting to my memory, and I have never since, though I have often sought for it, been able to find it again, or to remember the name of the architect. The next date we have in connection with the building is that of Prior Hoton (1289-1307), who repaired the roof of the nave. It is due to Prior Fossor (1341-74) that the large window in the North Transept was inserted, and which was restored by Prior Castell (1494-1519). To Prior Fossor also is due the great west window of the Nave. The Bishop's throne and his own tomb were built by Thomas de Hatfield (1345-80). In 1380 the altar screen was erected, mainly at the expense of Lord Neville of Raby, though Prior Berrington bore some part of the cost. It was made in London, and brought to Newcastle by sea. Hence the notion that it was made of Caen stone. It is really Dorsetshire clunch. The cloisters were begun in 1368, and not finished until 1498; they have been much mutilated. In 1404 the Dormitory was completed. In Cardinal Langley's time (1406-37) a great amount of work was done in the Galilee; windows had been inserted during the 13th century in the north and south walls, and Langley, who found the Galilee in a ruinous condition, put on a new roof, inserted the windows in the west wall, and, possibly, added two piers to the original Purbeck shafts of each column. He also erected his own tomb in it, behind which he placed the altar of the Blessed Virgin. The wood work of the reredos of that altar, of great interest, containing paintings of the fifteenth century, was taken away a few years ago, and not a vestige of it now remains. Why it was thought necessary to destroy this I cannot tell you. I would rather not speak of the ruthless destruction which has taken place in the Cathedral. It is too painful. There has been more mischief done during the last forty years than was done previously during a couple of centuries. Beautiful pieces of work, containing many interesting features, have been swept away under the ridiculous notion of restoring the building to what was called its original state of Norman simplicity. All the

perpendicular tracery in the windows has been destroyed. The screens dividing the transepts from their aisles, and the clock case, which had been originally erected by Prior Castell, and still contained much of his work, have all been removed.

The central tower, which was struck by lightning in 1429, was so much ruined in 1456 that it was almost entirely rebuilt, and was not finished in 1474. This only refers to the building above the great tower arches, which themselves are the work of Bishop Carilef. The last work I shall have to mention is the tabernacle work of the stalls of the choir. This was put in after the restoration in the time of Bishop Cosin. Cromwell confined the Scotch prisoners in the church after the battle of Dunbar, and it is said that in order to keep themselves warm they used the wood work for fires. Bishop Cosin also put up a solid oak choir screen, which, though some people did not like it, was, nevertheless, a handsome piece of work of great boldness in its carving, and I much regret its removal. There was in ancient times a screen between the two western tower piers, which separated the church into two parts. In fact, the building was originally constructed for two churches, the one in the choir for the monks, the other in the nave for the people. The throwing open the whole church I cannot but regard as a mistake. It is quite impossible to utilise a building of such vast proportions for one service. If the church were divided as of old, then week-day services might be held in the choir, and the Sunday service in the nave. I have to regret another piece of wood work, of much interest, which has also been swept away. Round the shrine of St. Cuthbert there was, until lately, a screen of oak, which was probably put up during the time of Queen Mary. It was a handsome work of its kind and did not interfere in any way with the general effect of the building, but rather enhanced it, and in addition it marked an epoch in the history of the church. During the reign of Henry VIII. the building passed from the monks into the hands of the Chapter, which was established by that king; but during Mary's reign the old religion was restored, and again possessed the Cathedral. There can be little doubt that the wood work which surrounded the Shrine of the patron Saint corresponds with the time of the re-introduction of the monks, and it was, therefore, one of the historical facts connected with the Cathedral Church of Durham. It is ever to be regretted that it

should have been removed. As the Cathedral is seen at present, I think there is too much of the mere building. It is empty, and wants furnishing; almost every part of it is seen at once. Others may differ from me upon this matter, and perhaps I may speak influenced by early associations, but I cannot but say that the screens had a good effect, and told generally on the building as a whole. At present the church appears to me too naked. There is nothing left to the imagination, there is nothing of mystery—so important an element in that which appeals to every mind.

I will now make a few remarks upon the general effect of this most majestic building in which we are assembled. I assert without hesitation that no grander Norman building exists in England, and if not in England, then in no part of the world. I will make a still bolder assertion, and say that no more impressive and effective Cathedral exists in England, I would almost say in Europe. You may go where you like, you may tell me of the beauties of Lincoln, the size of York, the varied architectural features of Canterbury, Winchester, and Ely, and the grace of Salisbury; but I say the Cathedral Church of Durham, as it now stands, is the finest ecclesiastical building in this country. I do not say that some others of our Cathedrals may not possess more exquisite pieces of architectural work, that some of them do not surpass it in size; but, granting this, where will you find anything which will compare with the Galilee. The Galilee is unequalled for its unique beauty and elegance. It is as beautiful in its lightness as the choir and nave are in their solemn massiveness. The Nine Altars, with its vaulting, its shafts carrying capitals carved with the most charming mixture of foliage and animal form has no rival to compete with. I say unhesitatingly that, taken as a whole, and looking at the solemnity of the building, its beautiful proportions, and the admirable way in which a great design has been carried out, Durham Cathedral stands unrivalled. Look at the symmetry of the great arcades of choir and nave; the pillars are not too short and broad, nor again too lofty and stilted, but admirably fit into the proportions of the whole. Look how the triforium and clerestory, neither dwarfed, nor too important, harmonise with the arcades which support them, and form with them a design of perfect symmetry and proportion. Everything is in complete harmony, and the church,

choir and nave, have a most solemn effect, and cannot but deeply move us. Peterborough, Norwich, and Gloucester, magnificent as they are in their early portions, sink down, I may say to nothing, when compared with the greater glories of Durham. When we stand within its time-hallowed walls, as we do to-day, and allow our minds to feel the due influence of its massive but perfect proportion, it seems as if it had been built for ever. It looks like the eternal hills.

This church we owe to William of St. Carilef. The whole plan of the building must have been elaborated and the main lines laid down by that Bishop. The choir and other parts are of his own building, and the nave, though built by Flam-bard, carries out in its main features the original design. The only difference between the two parts is in the richer effect given in the nave by the use of zig-zag and in the different patterns on the pillars. The work throughout harmonises in the highest degree, and that harmony is made more apparent by the variation. Two men have, it is evident, worked upon the church with the same intention, and upon the same plan ; and the slight difference in the character of their work but adds an additional interest and charm to the whole. In conclusion, I may repeat that the plan of the whole church is, I think, unquestionably due to Carilef, who finished a great part of the church, and who, I believe, carried the walls to the top of the arcade of the aisles round the whole building. I have now concluded my remarks, and will go round the building with you.

Mr Greenwell then conducted the party through the church, and pointed out in succession its various architectural features.

Report of the Meeting at the Castle, Durham.

AFTER the Cathedral had been inspected the company proceeded to the Castle to hear a paper by Mr W. H. D. Longstaffe. That gentleman having sustained an accident to his eye, the paper, so far as complete, was read by Canon Ornsby :—

Although one very early story of Durham is, it must be confessed, somewhat obscure, and the questions arising as to its occupation in Roman days, and the identity of Maiden Castle with Wardenlaw, where St. Cuthbert's body became immovable, do not enter my scope ; it is, however, noteworthy, we cannot doubt, that the town was fortified in some fashion during the

Saxon period. After the defeat of Malcolm's besieging Scots by Uctred, during the episcopacy of Aldhun, the erector of a Saxon Cathedral there, the most handsome heads of the slain were carried by their tangled hair to Durham, and, having been washed by four women, were arrayed upon poles round the walls, each woman having a cow for her pains. It may also be mentioned, as to this or some later period, that, according to newspapers, excavations for sewers showed that the carriage way of the Baileys surmounts a vast accumulation of refuse, including the bones of boars, stags, horses, domestic animals, and the extinct elk. The same appearances were reached at the outside of the city wall at Claypath Gates, and in both cases they suggested that ancient moats had been filled up with débris. Three years after the Conquest, in 1069, we gain another glimpse of Durham in a military point of view. The conqueror sent Earl Robert, surnamed Cumin, to the Northumbrians at the north side of the Tyne. He entered Durham and permitted his soldiers to act hostilely, they even slaying some of the "rustics" (*i. e.* serfs) of the Church, but was received by Bishop Egelwin with all civility and honour. The Northumbrians, determined not to submit to a foreign lord, marching all night to Durham, at dawn burst its gates (*portas*) with great force, and slew the earl's men, thus taken unawares, everywhere in the houses and streets. They then proceeded to attack the bishop's house, in which the earl had been received, but, not being able to bear the javelins of the defenders, they, in Cabul fashion, burned the house with its inhabitants, including the earl. The house was near the Cathedral, for, while the assailants were endeavouring to throw fire into it, the flaming sparks, flying upwards, caught the western tower of the period, which, according to Symeon, was in immediate proximity, and it appeared to be on the very verge of destruction. The people prayed St. Cuthbert to preserve his church from being burned, and a wind arose from the east, which drove the flames backwards from the church, and freed it from danger. The house had then caught fire, and continued to blaze. It will be remembered that Bishop Walcher was destroyed through the same Northumbrians setting fire to the roof and walls of Gateshead Church a few years afterwards.

The event sufficiently explains the erection of a castle at Durham. Walcher, of Lorraine, was made bishop in 1071, and in 1072, when the King had returned from Scotland, he built a castle in Durham, where, says the pseudo-Symeon, the Bishop might keep himself and his people safe from assailants. Of the nature of this castle we are, of course, ignorant, but, whatever were its beginnings, it soon rose to importance, for great stress upon its possession was laid in the controversy of 1088 between King William Rufus and Bishop St. Karileph, the successor of the murdered Walcher. It is difficult to ascribe an exact date to the early Norman chapel in the castle, but considering that it is so totally different from the peculiar Norman design which was introduced by St. Karileph in 1093, when he began his new cathedral, and was followed by Bishop Flambard, it would appear to be earlier than it. The defensive works at Durham by Bishop Flambard, who also built a castle at Norham (soon after destroyed by the Scots), were these:—"The city (*urbem*), although Nature had fortified it, he rendered stronger and more august with a wall. He constructed a wall in length extended from the

chancel of the church as far as to the citadel (*arcem*) of the castle. The place between the church and the castle, which many little habitations took up, he reduced to the plainness of an open field." Thus Place Green or Palace Green arose. In the time of his successor, Geoffrey Rufus, the monks' Chapter-house was completed, having caryatides and florid work, and we must assign to his episcopacy or that of Wm. St. Barbara the doorways of the nave, and perhaps the gateway of the castle. The possession of the castle was again an element during the assertion of a claim by William Cumin between the rules of Rufus and St. Barbara to be bishop himself.

We now come to the important episcopate of Bishop Pudsey. He built "a new wall from the north gate to the south one," by which Dr Raine understands "that part of the city wall which extends from the old goal gate (now destroyed) to the water gate, of which, towards its southern end there are (he says) some curious remains." But more to our point is the following assertion of Coldingham, the historian of Durham, about this busy prelate who put, or attempted to put, all his houses in order. "In the castle of Durham the edifices, which in the first times of his episcopate, the flame had consumed, he renewed; and the castle of Northam, which he found infirm in fortification, he rendered strong with a very substantial tower." One of the continuators of Symeon also mentions his building a castle on the Tweed, at his entrance to the bishoprick, by command of his relation, King Stephen, the earliest fortress erected by Flambard having been destroyed by the Scottish army, and then he proceeds thus:—"Many buildings he made in the bishoprick, and in the city (*urbe*) itself of his See, the old ones being destroyed, he made new and noble (*insignia*) edifices."

In considering the remarkable works of Pudsey, we must remember that he acceded in 1153 and died in 1194, passing through the whole of the Transitional period, beginning with the late and florid Norman style, and ending with a fairly advanced early English one. Notwithstanding the examples before him, his predecessors' Chapter House and the doorways of the Nave, all Pudsey's works, however rich, seem to have been chastened and toned down by that peculiar spirit which St. Karileph's style, continued by Flambard, would produce upon an artistic mind in a time when purity was in great danger from ornament. Magnificent as is the doorway to his hall in the Castle it is not meretricious. Then again, with the most eminent architects employed, he appeared to have been indisposed to desert the Norman style, notwithstanding the swift current of the fashionable pointed style. The Galilee is a wonderful specimen of what the Norman style, in its last days, with light and plain treatment, was capable of. Its date is about 1175. In this Galilee the prevailing characteristic is that ornament peculiar to Pudsey's time, a peculiar ornament used on capitals, usefully called the Transitional volute, capable of much variety, but always readily recognisable. Repeating my words, "rich as is the doorway," there is no trace in it or in the gallery above it of this volute. The Keep at Norham is too plain and utilitarian to yield details, but in the church, there, we find the Transitional volute surmounted with bold and good moulded arches, and in the windows of the chancel an unusual treatment of the common Norman zigzag ornament, by setting it edgeways. This we again find in Durham Castle. The

inference from all this probably should be that Pudsey's works there proceeded from the non-existence, or at all events his non-use of the volute, but that they were executed by the architect of Norham Church, who did use it there. Now Pudsey had two successive architects, and perhaps we shall not be far wrong in assuming that the old architect could not altogether shake off the old style, though he carried it to the utmost pitch of refined decoration and lightness, while the new architect, whose works at Darlington and other places we need not discuss to-day, could not decline the attractions of the new pointed style.

We hear nothing more of erections at Durham Castle until Chambre tells us that Bishop Hatfield built a curious work on the south side of the choir, near the stalls of the monks, in the middle of which was the "episcopal stall," and a place for his sepulture under the stall, and that "in the castle of Durham he renewed the edifices, which had become consumed or debilitated by antiquity and decay, and constructed afresh (*de novo*) the episcopal hall and the constable's hall, with other edifices in the same." Now, there are small portions of Hatfield's work in the corner of the castle seen on entering the city from Framwellgate Bridge, but unless he was using old materials wholesale, what is now known as the Great or Hatfield's Hall is manifestly earlier in its details, not later than Bishop Bek's time. Then there are two halls mentioned. The explanation may probably be in the fact that in all seats of consequence there were two halls, the one for state purposes, the other for domestic comfort. The episcopal hall here mentioned may well have been the bishop's private one. The constable's hall was, of course, an office for the transaction of his business, which was very multifarious, the Constable of the Castle being a sort of Receiver-General and responsible for the accuracy of the Pipe Rolls of the Palatinate. But this solution does not get over all the difficulty. The same author, Chambre, tells us of the much later prelate, Bishop Foxe, that he transmuted the hall in the Castle of Durham, for whereas there were two seats of regality, one at the top and the other at the bottom of the hall, now he left only the upper one, and on the site of the lower one made a pantry, &c., with two seats above for musicians, &c., works easily recognisable still. He also began to make a hall, kitchen, &c., in the high tower of the castle, but left them unfinished on his translation to Winchester. It seems plain that at some time Pudsey's Hall had ceased to be the principal hall before Tunstall encased it with his gallery, from the ground as Chambre and the works themselves show. The only theory that I can offer is that here as at Auckland, for some reason, what became the hall was originally the Great Chamber, standing in the same position, and probably built by the same bishop Bek. It is observable that Pudsey's hall at Durham stands east and west. So does that at Auckland, now the chapel.

Immediately after the sentence about these works by Hatfield, we have another one, plainly suggested by that of the earlier writer about Flambard's wall. Only that wall, as well as Nature, has now to be mentioned. "Although Nature and a wall had sufficiently fortified it, yet he rendered the Dunelmensian city (*urbem*) stronger by the construction of a very strong tower at his expense in the castle." This is obviously the present keep, the

picturesque character of which before its conversion into a University many eyes remember.

After Canon Ornsby had concluded the reading of this paper he invited the members of the two societies, and the visitors present, to accompany him round the Castle, so that he might point out to them, as nearly as possible in their chronological order, the various parts of the building which are more especially worthy of notice. We subjoin a brief *conspectus* of the information given by Canon Ornsby respecting the portions of the structure to which he directed attention :—

1. The entrance gateway, the groining of which probably belongs to Bishop Pudsey's time. Its exterior presents no features of antiquity, having been restored and refaced by Wyatt, about the early part of this century, or the latter end of the preceding one. The door, with its little wicket, is worthy of attention as regards its great strength, being almost wholly made of iron, justifying the expression of the chronicler, William de Chambre, who records that Bishop Tunstall "construxit portas *ferreas* ejusdem castri," an epithet which they well deserve.

2. The original Norman chapel of the Castle, of very early work, possibly of the time of Walcher, the first Norman bishop (1072-1080), but certainly not later than the early part of Karileph's episcopate (1081-1096). It bears a great similarity to the crypt of the abbey of the Holy Trinity at Caen, founded in 1066. The capitals of the piers, with their square abaci and rude imitation of the Ionic volute, are very like some in the Church of St. George Bocherville, near Rouen, which dates from the middle of the same century. The chapel is divided into nave and aisles, the altar platform being on an elevation of two steps. There are brackets for images or lights on either side of the east window, and an almshouse in the north wall. Each aisle has had a window at its eastern extremity. The two side windows which give light to the northern aisle were enlarged in 1840. In their original state they were widely splayed, plain, round-headed openings, not more than six inches in width. The capitals of the piers are peculiar and interesting in their ornamental details. The pavement, with the *herring-bone* arrangements of the small flag-stones which form it, is probably coeval.

3. The great stair-case of the Castle, the work of Bishop Cosin (1660-1674), gives access to what is now known as the Norman Gallery. The weather-worn stones of what was once its external wall are seen at the head of the staircase. Internally it presents a range of triple arches, adorned with chevron ornament, the centre one, containing the window, being higher in each case than the blank ones by which it is flanked. At the eastern end is a round-headed doorway of the same period, communicating by a staircase in the thickness of the wall with the floor in a lower hall. This doorway makes it obvious that this range of windows belonged to a large upper hall or chamber of state, and recent alterations have shown that a similar range of windows existed on its northern side. Below it was another hall. Both belong to the time of Pudsey (1154-1197). Access was given to the lower one by a very richly decorated doorway, clearly belonging

to Pudsey's period. It now gives access from Bishop Tunstall's gallery to some comparatively modern apartments. This doorway was long hidden by brick and mortar, which was removed by Bishop Barrington (1791-1826). The lower portion shows signs of exposure to the weather. The upper part is perfectly fresh, probably owing to its protection by a sort of penthouse roof open at the sides, which covered a staircase which gave access to it from the courtyard below. The upper hall must have had a high pitched roof. One of the original corbels is visible above the east side of the upper doorway.

4. The great hall of the Castle is commonly associated with the name of Bishop Hatfield (1345-1382). The great entrance from the courtyard had an external porch added to it by Bishop Cosin after the Restoration. The inner doorway is clearly earlier than Hatfield's time, and dates probably from Bishop Bek's period (1283-1310). Hatfield no doubt carried out a considerable work in this and other parts of the Castle, but it is clear that there must have been a great hall in existence on this side of the Castle at an earlier period, replacing probably some Norman buildings. A window on the north-west side of the large fire-place has escaped restoration, and shows banded shafts and caps which undoubtedly belong to the 13th century. In all probability this great hall, originally of the most stately proportions, owes its first foundation to Bishop Bek. Until the time of Bishop Fox (1494-1501) it occupied nearly the whole length of the block of buildings on the west side of the courtyard. The last mentioned prelate divided it, leaving it little more than half its original length, and converted the space gained at the southern end into different chambers and offices. His badge—a *pelican in her piety*—is twice repeated on the wall which forms this division. To Bishop Fox are also due the stone galleries corbelled out on either side, intended for trumpeters and musicians. He also added a large and lofty kitchen and offices. The buttery hatches still remain, of oak, black with age, carved with Fox's badge, and the motto *est deo gracia*, and the date 1499. Bishop Cosin curtailed the upper part of the hall in order to gain two additional rooms, and the space they occupied is now restored to the hall. He also added a screen, shutting off the tower part of the hall. This has unfortunately not been allowed to remain.

5. Bishop Tunstall added a gallery, which leads to the present chapel of the Castle, usually known by his name, and built by him. His arms are carved on the jambs of the windows. It was lengthened by Bishop Cosin, but he re-inserted Tunstall's east window. This chapel has recently been carefully restored, under the superintendence of Mr C. Hodgson Fowler. The stalls were brought by Bishop Tunstall from a chapel in Auckland Castle. The *misereres* of these stalls have much curious carving. The standards have Bishop Ruthall's arms carved on them (1509-1522).

6. The Keep, externally and internally, is perfectly modern, as far as appearance goes. No ancient work is to be seen, though there can be little doubt that it owes its erection, in the first instance, to William the Conqueror, and portions of his work are no doubt embedded in some part of the structure. The main part of it, as it stood, a stately and picturesque ruin, previous to its restoration, was probably the work of Bishop Hatfield.

Canon Ornsby then conducted the visitors to the terrace on the north side of the Castle, pointing out a portion of the building which is associated with the name of Bishop Butler, who made some alterations on that side, and whose arms are carved on the exterior. He also directed their attention from that point of view to the remains of the exterior defences of the Castle, and the position of the barbican or great outer gateway, so long known as the gaol gates, from the fact of its having been occupied until its demolition, about 1820, as the County prison. He also mentioned an interesting account given by Lawrence, Prior of Durham (1149-1154), of the old Norman Chapel, the Keep, and the position of the Castle, in a Latin poem (entitled *Liber Dialogorum Laurentii Dunelm. Monachi*). Prior Lawrence also tells of the havoc made by the wolves upon the young colts belonging to the bishop in the winter season. Durham at that time was surrounded by a wide tract of half forest, half moorland country. It is probable that a breed of wild horses, something like the Exmoor or Welsh ponies, roamed over the uncultivated hill and dale which extended from the country immediately about Durham to the head of the valley of the Wear.

List of Fossils found in the Calcareous Shale cropping out on the beach at Foxton Hall, about half a mile to the North of Alnmouth, Northumberland. By G. A. LEBOUR, M.A., F.G.S., Professor of Geology in the University of Durham College of Physical Science, Newcastle-on-Tyne.

THIS shale is almost entirely covered by the sea at high water, and can, therefore, only be collected in at certain times. It contains a large number of fossils, both as to species and individuals. Of these none appear to be peculiar to the bed, but many which are common in it are not usually found so high up in the series. Although the exact horizon of the fossiliferous band is not known, there is no reason to doubt that it occupies a position very near the top of the Carboniferous Limestone series—approximately that of the Filltop Limestone. The latter bed may be looked upon as bringing before us the last assemblage of marine forms existing in the Bernician area of the Carboniferous Limestone

Sea. Special interest, therefore, attaches to authentic collections from this zone.

Harlow Hill, on the line of the Roman Wall, near the Whittledean Reservoir, is the best known locality for Filltop Limestone fossils, but they are even more numerous in the shale of Foxton Hall. Comparing collections from both localities, one is chiefly struck by the presence in each, of abundant specimens of *Productus latissimus*, a form which is by no means of common occurrence elsewhere. The beautiful corals belonging to the genus *Lithostrotion*, which are so common at Harlow Hill, seem to be entirely absent at Alnmouth, a fact which must probably be referred to the less calcareous nature of the sea bottom at the last named place. On the other hand one of the Trilobites and most of the Crinoids found at Foxton Hall, have not yet been recorded from the Felltop Limestone proper. In the following list the species known to occur at Harlow Hill are marked thus "H. H." :—

1. *Clisiophyllum bipartitum*, McCoy. Not rare. H.H.
2. *Cl. sp.*, a long vermiform species. Common.
3. *Chaetetes tumidus*, Phill. Not uncommon.
4. *Griffithides sp.* Rare. H.H.
5. *Gr. Farnensis*, Tate. Rare. Sometimes in clay ironstone nodules.
6. *Poteriocrinus nuciformis*, McCoy. Not rare. I have found several perfect calyces of this small crinoid. The late Mr G. Tate, F.G.S., referred the form to *P. nuciformis* of McCoy, but my friend, Mr W. Percy Sladen, F.L.S., who has made the group the study of his life, doubts whether it belongs to the genus *Poteriocrinus*. He has, however, not yet decided the question, and in the meantime, I have placed my specimens in his hands for determination.
7. *Crinoidal Plates* of a larger form than is usual, are not rare. These are also awaiting Mr Sladen's determination.
8. *Crinoidal Stems*, some very large, attaining an inch in diameter occasionally, and ranging from that to the smallest size are very common. They occur in little local groups, probably occupying much the same spots which they inhabited during life. Some of these, undoubtedly belong to the genus *Poteriocrinus*, but it is not possible, at present, more accurately to name them.

9. *Fenestella plebeia*, McCoy. Common. H.H.
10. *F. membranacea*, Phill. Rare. H.H.
11. *Glaucanome pluma*, Phill. Rare. H.H.
12. *Gl. sp.* Rare.
13. *Lingula squamiformis*, Phill. Rare. Occurs in beautifully preserved specimens in small ironstone nodules in the shale.
14. *Productus punctatus*, Mart. Rare.
15. *Pr. longispinus*, Sow. Not uncommon. H.H. Occurs in two well marked varieties, one large and one small.
16. *Pr. giganteus*, Mart. sp. Rare. Very common at Harlow Hill.
17. *Pr. latissimus*, Sow. Very common. H.H. Chiefly young individuals.
18. *Pr. semireticulatus*, Mart. Rare. H.H.
19. *Orthis Michelinis*, Lév. Rare.
20. *Edmondia arcuata*. One fine specimen in a nodule only.
21. *Macrocheilus sp.* Rare. Bad specimens not specifically determinable.
22. *Murchisonia sp.* Very rare. A bad cast only found.
23. *Bellerophon Urei*, Flem. Rare.
24. *Euomphalus sp.* Common. A beautifully marked medium sized species.
25. *Orthoceras attenuatum*, Flem. Rare.
26. *Fish scale*, not determined.

12th March, 1880.—P.S.—I collected all the above during the summer of 1879.—G. A. L.

On Edin's Hall. By JOHN TURNBULL of Abbey St.
Bathans, W.S., F.S.A., Scot.

THE first mention of Edin's Hall is in the *Scots Magazine*, vol. xxvi., p. 431. The communication is dated from Musselburgh, 30th August, 1764, and is signed J. Murray. Though neither minute nor correct, it is interesting, as by it public attention was first directed to the remains. The name is there spelled "Eedin's" Hall, which probably was the pronunciation the writer then heard, and it exactly corresponds with that now used. The writer says:—"Some will have Eeden's Hall to be a Temple of the

God Terminus, but the form and manner of building is an invincible argument of the contrary. Others will have it to be a Temple for Druid Worship, but they ought to reflect that the Druids as well as the magi had no temples. It seems to me very probable that the Scots kept constantly an army of observation on the Lammermoor hills to be ready to defend the borders, if they were invaded from England by land, or by a foreign fleet from the Frith of Forth. As soon as the signals were lighted up along Tweedside or along the Forth this army would march down to their relief." This he thought might have been one of their positions. The next mention is in Sir John Sinclair's Statistical Account of the Parish of Dunse, in 1792, vol. iv., p. 389. It is there stated that the building is "by some called Wooden's Hall, but commonly called Edin's or Edwin's Hall." The writer says, "It is supposed to have been a British building, and afterwards used as a military station. What the original name was we have no tradition of, but in after times it has gone by the name of Edin's or Edwin's Hall," so called from the king of Northumberland, who is supposed to have "taken possession of it for a military station for an army of observation, as the Danes were frequently invading Scotland both by sea and land." Next in point of date is Chalmers's Caledonia, vol. ii., p. 211, where the description is almost the same as that in the Scots Magazine (to which reference is made) but not so correct; for it misinterprets the description of the entrances, and applies it to the building of Edin's Hall, whereas the description in the Scots Magazine was of the entrances to the Camp or enclosure in which Edin's Hall is situated. The New Statistical Account of the Parish of Dunse in 1845, vol. ii., p. 253, contains a short account, and more accurate than any of its predecessors; but the author of it afterwards explained that it was written hurriedly from memory and the testimony of others, without himself verifying the description on the spot at the time (Berwickshire Nat. Club's Proc., vol. iii., p. 9, foot-note). The late Mr Turnbull, of Abbey St. Bathans, contributed a paper to the Proceedings of our Club, in 1850, which contained a fuller account than any that had then appeared, and proceeded upon measurements so far as the remains then admitted of them. He also had the use of a MS. account, written by the late Mr John Blackadder of Blanerne East Side, a most accurate observer and

surveyor, and the author of a map of the county. Dr Robert Chambers visited the remains in 1854, and gave a short notice of them in *Chambers' Journal* for 10th June of that year, in an article entitled "A Day on the Whitadder." The object of the paper, however, is more philological than descriptive, and he derives the name from "Etin," which, in old Scottish tradition, is a giant. "Thus we hear in our early national literature of the tale of the Red Etin," *Popular Rhymes of Scotland*, 3rd Ed., p. 243; and "Sir David Lindsay in his *Dreme* speaks of having amused the infancy of King James V. with 'Tales of the Red Etin and Gyre Carling.'" Dr Beddoe, President of the London Anthropological Society, when visiting Edin's Hall, stated that the name "Etin's hald" reminded him of the Scandinavian word for a giant "ætan." It is confirmation of this derivation that there is a tradition of a giant connected with Edin's Hall.

On 25th July, 1861, the Club visited Edin's Hall, and in his Anniversary Address, Mr Milne Home gives an account of the visit, and makes some observations on the remains. Some years afterwards, he suggested that the ruins might be cleared out; and Dr Stuart, the eminent antiquarian and secretary to the Society of Antiquaries of Scotland, read to that Society, on 11th January, 1869, a paper on Edin's Hall, in which he mentioned Mr Milne Home's proposal; and on his suggestion, "the Society cordially approved of Mr Milne Home's plan for clearing out and preserving the very curious remains in question, and voted a sum of £5 towards the necessary expenses of doing so." In the *Transactions of the Archæological Institute of London* for 1870, General Lefroy gives a short account of Edin's Hall (and of the Picts house which was discovered at Broomhouse). He is of opinion that the earth-works of Edin's Hall are on a scale beyond the efforts of a very primitive people; and he refers to Mr Skene's preface to the *Chronicles of the Picts and Scots*, p. cxv., where is mentioned the defeat of a chieftain, Donald Brec, in the year 638, at a place not identified, but certainly south of the Forth, called Glenmairison, after which Etin was besieged (in *Tighernac*, *Chronicles*, p. 70, the name is spelled Etain). Mr Skene conjectures that this place may be *Caer Edin* now *Carri-den*, in *Linlithgowshire*; but it is quite possible that it may have been Edin's Hall. If so, it must have been a place of some

importance in the seventh century; and if St. Bathán ever visited the place, which still bears his name, he may in all probability have resided in Edin's Hall.

In consequence of the suggestion of Dr Stuart, a fund was raised by subscription, and the following paper contains an account of the excavations which have been made from time to time, and of the remains as now exposed.

Edin's Hall lies in the parish of Dunse, on the north-eastern slope of the hill called Cockburn Law, one of the range of the Lammermoors, and about a mile east of Abbey St. Bathans. This hill rises to the height of 1065 feet above the level of the sea. From its summit an extensive prospect of the country towards the south and east is obtained. The sea is nearly shut out by the hills which terminate abruptly at St. Abb's Head, and by the range of high ground extending from Ayton to Berwick; but glimpses of it are got at two or three places, and the view includes Eyemouth, Ayton, Berwick, Holy Island, Bamburgh, and the Valley of the Tweed from Berwick to above Coldstream, bounded on the south by the Cheviots at a distance of twenty miles, and the remoter hills of the county of Roxburgh on the south-west. Edin's Hall itself is not so situated as to command any expanded view. It is about 400 feet below the top of the hill on which it is situated, and which bears nearly S.W.; and the look-out from it is much circumscribed by the neighbouring hills; being confined to two or three miles of the Glen of the Whitadder, which is here narrow, steep, and rugged, and of the Valley of the Eye. The camp at the head of Prestoncleugh is a prominent object from it. It stands on a shoulder or terrace, uneven in surface, and having a considerable slope to the north-east. This shoulder or terrace is bounded on the south-west by the acclivity of the hill; on the north-west by a deep hollow or ravine running down to the Whitadder; on the north and north-east by a very steep bank covered with heather and brush-wood, at the foot of which is the Whitadder in a rocky bed about 250 feet below; and on the south-east by irregular but moderately sloping ground.

From this position of Edin's Hall, Major-General Lefroy, who visited it with Mr Milne Home, says, that it appears to him that it was provided against dangers apprehended from the eastward, and has a relation of opposition to the circular camps on the

opposite hill. On this platform is situated the enclosure or camp in which stands the building called Edin's Hall. This enclosure measures somewhat less than 200 yards from east to west, and somewhat more than 100 yards in greatest breadth from north to south. It is formed by earthen ramparts and ditches. On the north and north-east, where it is very inaccessible owing to the steepness of the ground and the river below, there is only a single ditch between two comparatively low ramparts; but on the other three sides there are two very deep ditches, and the same number of high ramparts—a ditch being outside, then a high rampart, next a very deep ditch, and inside of these another rampart. Even now these ditches are in some places from 12 to 15 feet deep, measuring from the level of the top of the ramparts, and the breadth varies from 15 to 25 feet.

The principal entrance to this enclosure or camp is at its east end. It is composed of a roadway or passage having a wall on each side of it. This passage commences at the inner of the ramparts and runs in a direction a little to the north of west, continuing of a breadth of 13 feet for a length of about 77 feet. It is then taken in or narrowed 6 feet on the north side, which reduces its breadth to about 7 feet, so as to form what may be regarded as a gateway dividing the outer from the inner passage. The stone constituting the projecting corner of this intake measures 21 inches on each side by 18 inches in height. Just before reaching this intake there is on the south side of the passage the appearance of a recess, measuring 8 feet along the passage, by nearly 3 feet deep; the west end of it forming a straight intake in the same line with the intake on the other side of the passage; but possibly this may be caused only by the displacement of the foundation stones of the wall. From this intake the wall on the south side of the passage continues in the same direction for $4\frac{1}{2}$ feet, providing a narrowed passage or gateway of that length, and it then turns south-westerly at a right angle, and can be traced for 20 feet, but is then lost. After the intake, the north side of the narrow passage or gateway does not run parallel with the south side of it; but slopes out 2 feet, so as to make the gateway about 9 feet wide at the west side. This north wall of the entrance passage then runs 66 feet in nearly a straight line parallel with the direction of the outer passage. It then forms the arc of a circle, widening the passage

by a circular recess measuring 30 feet along the line of the passage by 8 feet deep, thereby making the widest part of the passage here about 23 feet. This arc is prolonged at its western end so as again to narrow the passage to 6 feet, of which breadth it continues for 15 feet in the same north-westerly direction, where it terminates in a wall running north and south or nearly at right angles to it. At the inside or west of the first mentioned gateway there is no trace of a wall on the south side of the passage for a space of 20 or 30 feet; but a wall reappears there and runs and forms the south side of a passage, of which the wall already described forms the north side. The cross wall at which this passage terminates runs from the enclosing rampart on the north to the largest of the subsidiary buildings to be afterwards described on the south. The foundations of the wall along the whole south side of the outer passage are perfect; the stones being large; from 18 inches to 2 feet each way. The wall itself, composed of earth and stones, is 6 feet thick; and is from 3 to 4 feet high on the side next the passage; but only about 2 feet high on the south face in consequence of the rise of the ground. The outer corner of this wall is formed by a large stone with a square angle which stands $2\frac{1}{2}$ feet above the ground; the exposed faces of it being respectively $2\frac{1}{2}$ feet and 1ft. 9in. broad. The face of the wall on the north side of the outer passage is much obliterated for 30 feet at the east end, but the foundations of the remainder of it are perfect, the stones being of much the same size as those on the other side of the passage. The north face of this wall is not distinct, possibly it had no face of masonry at all, so that its thickness cannot be ascertained. The whole of the passage, as well as the circular recess near the west end of it is paved with flat irregularly shaped stones. At one or two places, however, the natural rock crops up and forms the roadway. The rampart running south from the entrance of this passage shows foundations for about 6 feet from the entrance on its outer face, and for about 60 feet on the inner face.

There is another entrance to the camp or enclosure on the south west which appears to have been an original one; but it consists simply of cuts or openings through the two ramparts. These openings are in a line with each other, but inside they are confronted by a high traverse, which falling in height on either

side is continued as a line of lower mounds or walls from 6 to 7 feet thick; the east horn whereof touches the largest of the subsidiary buildings to be afterwards mentioned, and both it and the other horn meet the north rampart. The whole combined form an inner enclosure in which the main building, or Edin's Hall, is situated. In the east horn or wall and nearly in a continuation of the lines of the main entrance-passage first described, is the appearance of one side of a doorway, but it is too indistinct to speak of with certainty. On the sides of the cuttings through the ramparts, and on the face of the traverse are stones which may be the remains of building. There is another opening through the ramparts near the middle of the south side, formed by the ramparts being lowered and the ditches somewhat filled up. It has a much more modern appearance than that on the south west, and has no traverse or defence as it has; but it had existed at the time Mr Murray visited the place in 1764, it being mentioned by him. From this south-west entrance, a wall or mound, without trenches, of from 180 to 200 yards in length, and more than 5 feet in thickness, runs first westward and then north, into the ravine or hollow, which bounds the terrace or shoulder on that side. Many of the large stones remain on each side of it.

Situated in the north-west quarter of the large enclosure or camp, and within the smaller enclosure which has been described, is the building of Edin's Hall. Until the excavations were made several years ago, it might almost have been mistaken for a huge cairn. The form, however, of the principal features of the building could be traced; though the work on the south-east side was so covered up and overgrown as to be almost indistinguishable from the natural surface, and in excavating the interior most of the *debris* was carted over it without causing any injury. It now shows from 2 to 3 feet high at this place.

The building is circular, and is about 55 feet in internal and 92 feet in external diameter. The external circumference is nearly a true circle, the diameter being from—

N. to S. - - 92½ feet.

E. to W. - - 90 „

S.E. to N.W. 92½ „

S.W. to N.E. 92 „

The interior circumference diverges very considerably from a

true circle, the walls varying from 15 to 20 feet in thickness. The foundation is composed of large flat stones, which project from six inches to a foot beyond the face of the wall, so as to form a scarsement as in modern buildings. The wall above this scarsement now varies from 2 to 6 feet in height, and is perpendicular. It is constructed of dry stone, that is, of stones without clay, mortar, or any cementing material. The stones are whin or greywacke obviously taken from the hill on which the building stands. There is no quarry in the neighbourhood from which they could have been dug out; and in all probability they were gathered from the surface where plenty of similar stones still remain. They are angular and irregular in shape; and it is doubtful if there are any marks of dressing on them. The largest blocks mostly occur on the outer face of the wall, and measure from 2 to 3 feet in length, and are often of the same height, but there are many of larger size than this. The outer face is regular and smooth, and presents a very perfect specimen of dry stone masonry. The stones are very carefully adjusted in their places, the projecting part of one stone being fitted into the hollow of the adjoining one; necessary interstices being filled up with smaller flat stones laid in courses. The interior face of the wall is not nearly so carefully built; the stones are smaller, not so well fitted to each other, and not so smooth on the exposed face, and the interstices are not "pinned" as on the outside. The heart of the wall is composed of much smaller stones than the faces, and apparently thrown in without any regular assortment. The perfection of the dry stone masonry had attracted the attention of the earlier observers, for Mr Murray, in 1764, says: "It has no cement or mortar of any kind. The stones, however, lie very close and compact, the interstices being exactly filled up with small stones. Among the mass of ruins almost every stone has some irregular figure cut out upon it, and not one of these figures resembles another. I believe, for my part, that the upper part of every stone has been cut to receive the convexities and rugged surface of its fellow, and that this is the whole mystery of the figures." It is almost unnecessary to say, that there are no "figures cut out" upon any of the stones, and what was meant is probably that the stones themselves are of very irregular shapes, and these shapes the observer believed had been artificially produced. In Sir John Sinclair's Statistical

Account (1792) it is stated—"The building is not cemented with any sort of mortar. The stones, which are whin and many of them very large, are all grooved into one another—that is the concavity of the one receiving the convexity of the other, so that they are locked together, yet all these locks are different."

There is only one entrance or doorway, and it is on the east side. The wall where it pierces it is $16\frac{1}{2}$ feet thick. The doorway forms a passage, the south side of which is 16 feet long, and the north side 17 feet long. For a depth of 7 feet from the outside it is 4ft. 9in wide. It then widens by the wall being re-ceded at a right angle, 3 inches on the south side and 6 inches on the north side, so as to become 5ft. 6in. wide for the innermost 9 feet. The intake is effected by large stones having a square angle set upright. It is probable that this intake was meant for a door closing against, but there is no socket or chase into which a bolt or beam could be fixed behind it. There is no special arrangement in the passage, as if for a second door, which was common in such buildings. In the entrance part of this doorway lie two stones, the larger of which measures 6ft. 3in. long by 3ft. 3in. broad, and 1ft. 6in. thick, the other being only a few inches less. They probably weigh $3\frac{1}{2}$ tons each. These have evidently been lintels covering the doorway. They are sufficiently broad to cover only the outer half of it. No stones large enough to form lintels for the inner half were found, and this half was probably covered by the gradual convergence of the walls on each side, as has been the case with the chambers or cells to be presently described. The outside sill of the doorway is formed by one large stone. The height of the wall remaining on the north side of this doorway is 5ft. 3in.; and on the south side is 4ft. 6in. The highest stone remaining on the north side of the doorway measures 3ft. 6in., by 3ft., by 1ft. 6in. It is close to this doorway, on the south side of it, in the interior of the building that the great fire-place seems to have been; for here the stones are much calcined and blackened by a fire having been made against the wall, and were crumbled a good deal away. There is no appearance of a built fire-place or chimney. The passage is paved. The central area to which this doorway enters has a slope from west to east, and about a fourth of it on the east side next the doorway is paved with flat, rough stones, which are generally from 1 to 2 feet square, but some of them are 3, 4, and almost 5 feet long.

Opening from the inner and wider part of the entrance-passage on each side of it, and formed in the thickness of the wall, is a small chamber or cell. The cell on the north side of the passage enters and is on the same level with the passage. The doorway to it is 3 feet wide through a wall 2 feet thick. This chamber is kidney shaped; the south end in which is the doorway being, however, cut square. Its width is 7 feet, and its extreme length from the south-east to the north-west corner is 16ft. 4in. The thickness of the wall between the chamber and the interior court is 4 feet, and between the chamber and the outer face of the building is 8 feet. The walls remain to a height of 6 feet, and at the north end show a convergence inwards as if to form a vault-shaped roof. The floor is paved.

The chamber on the south side of the passage enters by a doorway $2\frac{1}{2}$ feet wide, which is $2\frac{1}{2}$ feet above the level of the passage. It had originally been only $1\frac{1}{2}$ foot high, and has been raised to the present height by another stone, a foot thick, being put on the old sill, but recessed from 4 to 6 inches, so as to form a narrow step. Inside the chamber is a rude stair of three steps down. The chamber measures 7ft. 8in. each way, being nearly a square, with one of the angles rounded. To the south of this chamber and separated from it by a partition 4 feet thick, is another chamber, which is of the same width as that just described, but only 5 feet long, and rounded at the south end. In the south-east corner traces of a fire were found. There is no entrance to this chamber through the partition or elsewhere. These two chambers had originally formed one chamber of the same kidney-shape squared at the one end, as that on the north side of the doorway, and exactly the same in size. The partition or dividing wall has been built after the chamber was formed, and rests against the walls of it, but is not bonded into them. The walls of these chambers are from 3 to 5 feet high.

All the other cells or chambers enter from the interior court. Of these there are three, or at least there are three entrances from the court—for each entrance leads to more than one cell. The entrance to the cells in the north side of the building is 3ft. 2in. wide. Facing it and projecting from the opposite wall is a partition, the thickness of which is exactly the breadth of the door. It projects 5ft. from the north wall, and as the chambers or cells are 7ft. wide, it leaves entrances to the right and left

about 2ft. wide into two separate cells. The cells are each 10ft. long by 7ft. wide, the ends being rounded and the side walls taking the shape of the circular wall in which they are formed. The walls and partition are from 4 to 5 feet high. The floor of the north cells is not paved. The entrance and the floors of these chambers are on the level of the central court of the building. The thickness of the wall between these north chambers and the outside face of the building is 6 feet at the east end and 7 feet at the west end of them. Beside the entrance there were traces of a fire.

On the west side of the building are three cells, or more properly a lobby and two chambers entering by one door. The door is 3ft. 6in. wide, and rises from the floor of the court in one step about a foot high. On each side of this entrance is a partition leaving between them what may be called a lobby 5ft. 10in. wide. The partition on the south side of this lobby and dividing it from the south cell projects from the west wall so as to leave a door into the cell between it and the east wall; but the partition on the north side of the lobby projects from both sides, and the doorway into the north cell is in the middle of it. The south partition is 4ft. 4in. thick—the north partition is 3ft. 2in. on the east side of the door and 3ft. 10in. on the west side of it. The length of the three chambers is 33 feet, and the width 7 feet to 7ft. 6in. The wall between the cells and the court is on the north side of the entrance door, 4ft. 8in. thick, and on the south side 4ft. 11in. These cells are not exactly of the same size; the north one is 9ft. 6in. long; the south one, 12ft. The height of their walls is from 3 to 4ft. The central or entrance cell is paved, and a part of the south cell nearest the door. Beside the door of these cells in the court, traces of a fire were found; and in the southmost cell in the middle of the floor a hearth and remains of a fire were also found. On the upper surface of the stone forming the south side of the doorway to these cells is the only artificial marking which has been found. The surface in which it occurs has always been exposed above ground, and that the marking is not very recent is evident from the fact that it is overgrown with lichen. But whether it is ancient and contemporary with the building itself, it is difficult to say. It is represented in the Plate of the real size. None of the partitions, either in these or in the north cells, form part of the original

building. They are not tied or bonded into it, but are separate pieces of building of ruder masonry, and built of stones smaller in size and worse in quality. In none of the doorways of the building, except the main entrance, is there any projection or "kepp" for a door. There is no scarsement in any of the cells.

There are indications in all the cells of the building of convergence towards the roof. In the chamber on the north side of the entrance this convergence begins at a height of 8 feet, in the north chamber at about the same height, and in the west chambers (those opposite the entrance) at about 1 foot 6 inches.

On the south side of the building is an entrance or doorway 3ft. 2in. wide and entering not quite straight in, but bending rather to one side. To the right on entering, that is to the west from this entrance, runs a passage 11 feet long, and from 3 to 5 feet wide, leading to a stair of which nine steps remain. These steps are very rudely formed, each of a single stone, which may possibly have been broken (for they are not dressed) into its present shape. They are respectively, beginning at the lowest step, 5, 6, 7, 6, 10, 5, 7, 8, and 9 inches high, and 9, 9, 5, 9, 6, 7, 6, and 6 inches broad in the tread. The edges of some of these steps appear to be slightly worn; and as the stone is a hard whin, this indicates the use of the stair for a long period of time. The staircase is narrow, being 2ft. 11in. at the lowest step, and 2ft. 2in. at the highest. In the passage leading to the stair and on the south side of it is a low bench. It is 5ft. long, and from 1ft. 6in. to 2ft. broad, and 1ft. high, and, like all the rest of the structure, is composed of dry stone building; the longer and flatter stones being used for the top. The height of the walls in this passage is from 3 to 5 feet. At the other end of this passage from the stair, and on the left or east of the entrance to it, is a cell or chamber one step (of 1ft. 3in.) below the level of the passage. It is of an irregular shape, the largest dimensions being 9ft. 8in. from N. to S., by 6ft. 4in. from E. to W. The height of the walls is 3ft. 6in. In neither the passage nor the cell is there any pavement.

In the north-west and south-east of the building there were supposed to be traces of other chambers, but now that the building has been exposed it is found that none such exist.

Outside of the building and attached to it on the north side of the doorway is a chamber, 7ft. 3in. long by 4ft. 9in. broad.

It has two entrances. One of these is on the south side and close to the door of the principal building. It is raised by a high step about two feet from the ground. It is 2ft. 3in. wide, and the wall through which it passes is 5ft. thick. The other entrance is on the south side. It is 4ft. wide, and is on the level of the ground. The east wall is 2ft. 3in., and the north wall 3ft. thick. In this chamber were found some bones, teeth, remains of burned wood, a stone whorl, and what may have been a hone or sharpening stone. On the east of this building are foundations, but the plan could not be traced.

Besides the important building which has just been described,* there are within the space enclosed by the ramparts several smaller remains, which have also been excavated. None of these, however, are within the subsidiary enclosure in which the principal building is situated. The largest of them is about 50 feet south-east of the principal building, and touches the wall forming the subsidiary enclosure already mentioned. It is a circular building, or rather foundation, 47ft. in internal diameter. The wall along the north and east sides is 8 or 9ft. thick. On the south-west the ground rises, and has been cut into, so as to prevent the floor having too much of a slope, and here accordingly there is no wall having faces, but the stones rest against the face of the cutting. Some of the stones are 3ft. by 2ft., but most of them, though of considerable size, are smaller than this. The door is on the east side, and is about $4\frac{1}{2}$ ft. wide, but it cannot be exactly measured. One of the outside corner stones which remain, measures 2ft. 7in. high by 2ft. 6in. outside of the wall, and 1ft. 9in. to the doorway. There is no stone near, which could have formed a lintel, nor are there any accumulations of stones or *debris* to indicate that the walls had ever stood much above the level of the ground. About 7 feet south of the doorway was an appearance as if of another doorway, but if such had ever existed at all it was too indistinct to be traced when excavated. Outside of the doorway, both on the north and south sides, are foundations as of walls enclosing a small

* A reason for such a prodigiously massive construction as *Edin's Hall* exhibits, Major General Lefroy is of opinion, may be found in the excessive insecurity of a circular building of dry stone without external openings, against an active enemy who could get at the foot of the wall; for he would certainly quarry through in time.

court yard. This court, as well as most of the circle itself, is well paved.

Twenty-five feet east of this circle is another but smaller circular foundation. It is 32ft. in diameter. It is mostly cut into the slope of the ground; but on the north side, where the wall of it is on the level of the surface, it is nearly 7ft. thick. The door is to the east, but only one side of it is perfect, so that its width cannot be ascertained. About half of the circle next the door is paved.

About 40ft. south of the last is another and a smaller circle. It is 17ft. in diameter. It also is cut into the slope of the hill on its south side, and the wall on the north is not sufficiently perfect to admit of measurement. The door can be seen on the east side, but its exact width cannot be measured. The eastern half of the circle is paved.

Still further south, and about 25ft. from the preceding, is another circle of 16ft. diameter. Being on steep ground on the side of the innermost rampart, it is almost wholly cut into the slope of the hill; but notwithstanding of this the floor has still a considerable slope on it. On the north-east, where it is not sunk into the ground, the wall is 6ft. thick. The door is to the east, and is 5 feet wide; but it is doubtful if the sides of it are entire. The doorway and about a quarter of the circle next to it are paved.

On the north side of the entrance, and almost touching the north wall of that entrance just before it contracts to the 7ft. doorway before described, is a circle between 19 and 20ft. diameter. The south half of it is sunk into the slope of the hill, and the wall on the north half is $3\frac{1}{2}$ feet thick. The door is on the east side, and appears to be about 5 feet wide, but one side of it is indistinct. The stones on both the inside and outside corners of the side that remains are $2\frac{1}{2}$ ft. by 2ft. by 1ft. The doorway is paved, as also is about a quarter of the circle next it.

To the north of this last, and situated between the two ramparts, which here diverge considerably, are four structures in a row, within 10 or 12 feet of each other. The eastmost of them is a circle of 17 feet diameter. The ground slopes steeply to the north, and while the south half of the circle is cut into the hill, the north half is supported by a wall, which must have been 4

or 5ft. high, in order to raise it to the level of the south half. This wall is 7ft. thick. The doorway is on the east, but does not admit of accurate measurement, though it seems to have been 5½ft wide. It is paved as well as a small space outside of it, and nearly a quarter of the circle inside next the door. There is a step, 6 inches deep, from the doorway down to the floor of the circle.

The next structure is so indistinct that the plan of it cannot be made out. It seems to be rectangular rather than circular.

The next is a rectangular foundation, 10ft. from east to west, and at least 12 from north to south. There is a doorway, which may have been from 3 to 4ft. wide, near the east end of the north side. There is no pavement. The wall exists on the north side, and for the length of 10 or 12ft. on the east and west sides, but does not remain on the south side.

The farthest west of these four structures is a circle from 20 to 21 feet diameter. The south half is cut into the slope of the ground. The north half is supported by a face wall, with the material which has been dug out of the south half apparently filled in behind it. The door is as in all the other circles to the east, but it is too incomplete to admit of its width being ascertained. Nearly half of the circle is paved, as well as the doorway, and a path 12 feet long by 6 feet broad leading from the doorway down a steep slope.

In the extreme north-east corner of the outer rampart is a very distinct circle from 16 to 18 feet diameter, but on its being dug into no wall or building was found. There is also the appearance of another but somewhat smaller circle, 30 feet to the south of the largest of the subsidiary structures, but on being dug into, it too showed no remains of building.

There does not now remain in any of these subsidiary structures what is properly a built wall, unless it be the retaining or supporting wall of the eastmost of the four, which are situated between the ramparts. What has been called walls in the foregoing description is only a row of single stones on each side of a narrow mound, which is composed of earth and smaller stones; and in none of them is there any remains of actual building on the top of this rude foundation, nor is there debris to show that building of any extent had ever existed.

From the entrance through the ramparts on the south-west of

the camp or enclosure, a wall runs westwards and northwards for a distance of about 180 yards, losing itself in the ravine or narrow glen forming the west boundary of the platform or shoulder on which the remains stand. A good many of the stones forming the face of the wall still remain *in situ* so that its breadth and direction can be quite ascertained; but the ground on each side of it has been ploughed, so that if any road ran alongside of it, all traces have been destroyed; but on the uncultivated ground further west is a road which is still used, though overgrown with turf. It stops on reaching marshy ground, which, except in very dry seasons, will not carry a cart. It can, however, be traced through this bog to firmer ground on the other side, and for a considerable distance westwards till it is lost at the side of the Whitadder, near where the Allerburn joins that river; and fully half a mile from Edin's Hall. It may have crossed the river by a ford, but there is no appearance of it on the other side. The greater part of this road is not used now, nor has been in recent times, but it is impossible to say whether it was in any way connected with Edin's Hall.

Within the enclosure or camp there is no well or water supply, but on the hill, a few hundred yards above it, is a good spring. Dr Hood, of Sunnyside and Mains, states that when he first examined the remains, there was a cut or conductor from this spring to the camp; the water from which was discharged by an opening in the steep bank below the north rampart, where a break in the bank still remains; but as the ground through which this conductor passed has been ploughed for many years there is now no trace of it. There is no path or road from the enclosure down to the river.

On the top of Cockburnlaw is one of the circular camps so common in the neighbourhood, and on its slopes are several other remains, which have never been described, but these do not fall within the scope of this paper.

The articles found during the excavation were:—

1. A stone ring or whorl, $1\frac{1}{2}$ inches diameter.
2. A hone or sharpening stone, $4\frac{3}{4}$ inches long; 1 inch broad; $\frac{3}{4}$ inches thick. These were found in the chamber outside the main building.
3. Piece of a ring apparently of jet; $2\frac{1}{4}$ inches in external diameter.

4. An amber bead, of a brownish-yellow colour, $\frac{1}{2}$ inch in diameter. These were found outside of the building, near the base of the wall on the south side.
5. Stone knife or implement found in chamber on north side of doorway. It may be doubted if this is not simply a water-worn stone. [Mr Joseph Anderson says this looks as if it had been used as a whet-stone.] It is $7\frac{1}{2}$ inches by $2\frac{1}{2}$ and $\frac{3}{4}$ inches.
6. A quantity of bones, teeth, &c., most of which were found in the chamber outside the main building; although both bones and teeth were found occasionally in all parts of the main building.
7. An oyster shell.
8. Fragment of a translucent glass armlet.
9. A small bronze [or brass] thimble. "This," says Mr Anderson, "seems to be the head of a brass nail, such as was used for Highland shields, &c., but more conical." It is $\frac{1}{2}$ inch high; $\frac{3}{8}$ inch in diameter.
10. Octagonal buckle of bronze or brass [more probably the latter], 2 inches in diameter, with traces of ornamentation. These two articles cannot belong to the earliest occupants of the stronghold. The brooch was found in cutting a trench through one of the earthen ramparts in order to wheel away more conveniently some of the rubbish from the excavations. It has been examined by Mr Albert Way and Mr Franks of the British Museum. Mr Way writes:—"I thought that it might be early fifteenth century, but Mr Franks, on whose opinion I have great reliance, will not give it a date earlier than the close of the century;" and in another communication he says—"I wish I could have sent you a more detailed note on the brooch, or referred you to a similar example. I know that one has fallen under my observation. I feel, however, no hesitation in following my friend Franks' opinion of the date of the relic, which bears indeed the evidence of its age in its style of workmanship."

All these articles [8 excepted] have been deposited in the Museum of the Society of Antiquaries in Edinburgh.

11. Various fragments of querns.

Mr Fergusson, in his *Essay on Brochs* (1877), says, that there is not so far as he knows, "any example in any part of the world

of so numerous a class of buildings, which show so little difference in design or dimension," and he then gives a general description of a Broch, as follows :—

"They are all circular, about 60 feet in diameter externally, and contain internally a court yard 30ft., more or less, in diameter. The walls of this inner court are practically perpendicular, while the external walls slope inwards at a considerable angle so as to give the towers the form of truncated cones. The walls of the towers are consequently about 15 feet in thickness at the base, and in them on the ground floor are generally found two or three large apartments following the curve of the walls, which were apparently the living rooms of the inhabitants. Above these, still in the thickness of the walls, are generally to be found a series of low apartments, divided by horizontal slabs into berths like those in our passenger steamboats and used apparently for the same purpose; but higher up, where the walls get thinner, they could only be used as store places or cupboards for the custody of provisions or valuables. All these apartments were lighted from the interior by openings looking into the court yard, which, at least, originally never appears to have been roofed. In addition to these there is always a staircase—also in the thickness of the walls—leading from the basement to the top of the building and giving access to these various apartments. In none of the Brochs is there any opening externally, except the doorway. That is always on the level of the ground, low and narrow, and leading by a passage of about the same section as the doorway, but 15 feet long, to the interior court of the building. There were always apparently two doorways in this passage, and between the outer and inner either one or two ground chambers, which formed very efficient defences against any one trying to penetrate by this entrance to the interior. * * * They are all so much alike * * that we may certainly assume without fear of error, that they were all erected by one people for one purpose, and within a very limited space of time, say two, or at most three, centuries from the earliest to the last."

From the particular description which has been given of Edin's Hall, and Mr Fergusson's definition of Brochs, it is evident that Edin's Hall is a Broch; but that it differs from Brochs in general in three particulars. (1) It is the largest Broch in

existence. (2) It is surrounded or defended by important out-works. (3) It is accompanied by other buildings which evidently belonged to and were dependent on it. And (4) it is further remarkable by being furthest south of all Brochs, and by being one of a very few which are found out of what may be called the native country of Brochs; namely, the north and south-west of Scotland, and the Orkney and Shetland Islands and the Hebrides. It is estimated that there are in existence, the remains of about 500 Brochs altogether; and of these there are only five beyond the boundaries mentioned. Of these five, there are two in Forfarshire, one being on each side of Dundee, one in Perthshire, and one in Stirlingshire situated on the top of two hills, about 8 miles apart, looking at each other across the Forth, and the fifth is Edin's Hall.

To what influence we are to ascribe these isolated examples, it is impossible to say, and is a question of the same nature as that which arises with regard to the round towers at Abernethy and Brechin, being the only examples existing out of Ireland; or in regard to the stone on the Castle Hill of Edinburgh, which is the only one with incised symbols found in Saxonia.

The tradition of a giant which has been alluded to as connected with Edin's Hall is, that such a person lived there, and maintained himself mostly by plunder. On one occasion, returning from Blackerston (a farm on the other side of the Whitadder) with a bull on his shoulders and a sheep under each arm, he crossed the river at the "Strait Loup," and in ascending the slope towards Edin's Hall, he found a pebble in his boot. Taking it out he tossed it from him on the wayside, where it still lies as evidence of the truth of the tradition. It is a boulder between one and two tons weight.

*Notice of Squirrels colonizing a District in South North-
umberland.* By Rev. J. F. BIGGE, Stamfordham.

THE first Squirrel seen here, was about twenty-five years ago. I met a man one morning, and he told me the day before, that he was riding over the bridge at Corbridge, and he saw two Squirrels running along the parapet of the bridge northwards *very* early in the morning. Two days after a farmer told me, that he saw two Squirrels sitting on the roof of his byre, at Muckeridge; the next day they were seen at the Birness, and within a few days after they landed at Dissington, the residence of Mr Collingwood; where they used to lay down nuts for them; and they are still there, and in the neighbouring woods at Cheeseburn Grange and Matfen.

On an Ancient Phial, found at Kelso. By FRANCIS
DOUGLAS, M.D.

DURING the summer of 1878, the foundation was being dug for a new Public School at Kelso, in the vicinity of the Abbey, and on a portion of ground, which, from the numerous remains of stone sarcophagi and bones, must have at one time been used as a burying-place. About five feet below the surface, and in close proximity to a perfect stone sarcophagus, was found a small glass phial, which happily attracted the notice of the contractor, was secured by him, and subsequently presented to the Kelso Museum. The phial is one inch and three-quarters in length, with a narrow neck, expanding again to a funnel-shaped lip. The greatest circumference is three and a half inches, that of the neck one inch and half—colour greenish, semiopaque and partially iridescent, like Venetian glass. The phial is of considerable strength, and has a base hollowed out like a wine bottle of the present period. The sarcophagi found at the same spot belong to the 11th or 12th centuries.

On comparing this phial with others in the Museum of the Antiquarian Society of Scotland, in Edinburgh, I found no specimens at all resembling it in form, excepting one which was very much larger and slighter. The obliging Curator and Dr Mitchell,

who carefully inspected the phial, were of opinion that it was of Grecian manufacture, and about 700 years old, a date which nearly corresponds with the building of Kelso Abbey, by King David of Scotland. Such phials are believed to have contained unguents for the anointing of the dead. The drawing which accompanies this brief account was made by my friend, Mr Frain, whose name is a sufficient guarantee for its correctness.

On Ancient Interments in a Tumulus, called the Fairy Knowe, near Stenton, East Lothian. By JAMES HARDY.

A DISCOVERY of a funeral urn and accompaniments was made in a cairn or mound, on the 20th January, 1878, on the farm of Meiklerig, near Stenton, East Lothian, the property of Lady Mary Nisbet Hamilton, and farmed by Mr Stewart. For the particulars, and a sight of the articles then disinterred, I am indebted to the Rev. George Marjoribanks, minister of Stenton, who was not aware of the circumstance of any such operations being proceeded with, or of anything being found, till afterwards, when the most interesting portion was removed.

The mound for generations stood in the middle of a flat field, and was supposed to be composed of rock, with a thick layer of earth covering it, and stones led from the fields piled about it. The name of the mound was the Fairy Knowe; and in former times it was a source of fear to the children of the parish, because of the fairies who danced round it. Whins and broom to shelter the "good people," when tired with their frolics, grew on its skirts. The tumulus was 110 yards in circumference; and from 10 to 12 feet high in the centre. As the mound covered a good large space of valuable ground, the farmer was induced to remove, at least a portion of it. The constituents, on being tested, proved to be entirely of stone and boulders, without a rock nucleus. Hundreds of cartfuls of stones were led away. When the workmen had got beyond the outer stones—the accumulation of ages from the field itself—they came to a much larger size of boulders, forming quite a circle round the heap. These were with difficulty got into the carts.

It was at the east end that they commenced their operations. They had not gone far into the cairn proper, till they came to a small square cist, placed near the level of the original surface. The cist was formed of red sandstone slabs, which are native to the district, and inside the cist was an *Urn*. The slabs containing it were very carefully arranged, the top slab or cover being a few inches above the urn, so as not to press upon it. Removing one of the side slabs first, the urn appeared quite entire. The urn was placed like a flower pot upside down, and when lifted was found to cover incinerated bones and ashes. Of these the urn was quite full. A most ludicrous remark was made by one of the men at this stage: "Here's a' richt noo," he said, "there's the grey-beard." They had not been over-careful with the "grey-beard," for during its removal part came away, exposing the ashes of the dead, bones, etc. Not being carefully looked after, the urn got smashed into fragments, most of which were subsequently collected. Within about a foot they came upon another cist. This was about four feet long, and contained a few pieces of a cranium. [The remains of a spine are also mentioned, possibly found here. It is evident that a grave four feet long would not be constructed for the skull alone.] This cist was built entirely of white sandstone, which could not have been got in the neighbourhood. The slabs in neither case were large. Mr Marjoribanks, whose report, in two separate letters here combined, I chiefly follow, says: "Both this cist and the urn-box (if I may so call it) lay *north* and *south*, not *east* and *west* as graves are made now." Both were reckoned by the on-lookers to be *one* interment, but I believe there were *two* burials here, and not only so, but that they may have belonged to very distinct periods, one of them being intrusive. The remains of bones were reckoned to be those of a full grown man. Along with one or other, I cannot ascertain which, a small flint-knife and miniature whet-stone were obtained; most likely with the cranium.

The earthen-ware urn was of large capacity, and stood upwards of 12 inches high; being broken, the diameter across the mouth could not be ascertained. Its general design was a very large sub-triangular vessel, moulded into three divisions. The upper and widest was $2\frac{1}{2}$ inches high, and projected all round above the next division, from which it was separated by a

strong rim. The next was contracted in circumference into a concave, this space being $3\frac{3}{4}$ inches high. It then shewed a bulging rim or rib, and below this the remainder diminished in breadth triangularly and appeared exactly in shape like a flower-pot. This third portion ended in a flat-bottom with a slightly protuberant margin, the bottom diameter being 4 inches, and its thickness 1 inch. This third division was 6 inches in height, and looked as if it had been shaped with a knife, or some cutting instrument. The external surface of the urn was well smoothed, and displayed on the two upper divisions a considerable amount of ornament of a simple kind, but very rude. The lip round the mouth, which sloped inwards, was $\frac{3}{4}$ inch broad, and had two rows of irregularly running double lines, which had been impressed by plaited thongs of leather, or by plaited rushes. The upper division of the urn shewed a lattice or trellis pattern of double oblique lines of impressions of plaited thongs, crossed mostly by single similar lines; the two forming rhombs of which there were five in each series. A double plait-formed line encircled the urn at the top of this design; a second passed round it in the middle; and the projecting rim below presented two similar encircling bands, both from a double impression. The ornament on the concave area was differently disposed. This was divided into broad, but not equidistant, spaces, which were occupied for the most part by sets of double perpendicular and horizontal lines, arranged alternately. There were first 7 upright double lines of thong-impressions; then 10 horizontal; then 6 uprights followed by horizontals; then 8 uprights, and the horizontals again; and then these lines were piled up aslant, one against the other like slabs, forming a kind of inverted Vs; while again after the interposition of the horizontals; the lines were impressed in lattice work, with larger openings than on the upper division. There was no pattern on the under portion. The urn was clay-coloured; in the interior it was much blackened with ashes. At one time, a boss of some reedy grass, had been enclosed within it, while the clay, of which it was composed, was still soft. The impressions left by this were very like the leaves of Reed-Canary-Grass (*Phalaris arundinacea*).

The oblong-sharpening stone with blunt ends, has four faces, which are smoothed, but had never been rubbed on. It is 3 inches long, $\frac{3}{4}$ inch broad, and $\frac{1}{2}$ inch thick. It is of primary

clay slate, of fine grain, of a grey colour, and shews specks of mica. It had been a fragment selected from the boulder-drift of the district, in which rolled portions of a similar stone occur. Near one end on each side there is a small perforation of no great depth, the size of a gimlet hole. The use of this diminutive article is unknown. It might have sharpened needles or prickers.

The small, thin, neat knife-blade is of a grey-brown flint, and had no marks of ever having been in use. It is $3\frac{3}{4}$ inches long, and $\frac{3}{8}$ of an inch broad; semi-elliptical in shape, with a blunt point, and a truncate base. It is formed of a chip, of which one side shews the smooth original fracture; the convex side is finely chipped to a serrate cutting edge. It is thinned out by chipping at the base, where it would enter the haft, the edge there being blunted.

It is unfortunate that the articles had been confused, because we have here probably (1) a burial of the Stone Period; the body being placed in a folded up position, with stone implements; and (2) an urn of a subsequent age, introduced as a secondary interment; the one surrounded with stones from the calcareous sandstone, and the other with red-sandstone slabs.

Everything suggestive is gone now; the venerable tumulus with its mysterious consignments; the sprightly assemblages of rural fays with the belief in them; the tasselled broom and golden-bloomed furze; and the linnet-nest which they sheltered and concealed. The ploughshare has crossed the place, and the field is now one dead level.

The objects described have been deposited in the Museum of the Society of Antiquaries of Scotland.

The Catrail, or Picts-Work-Ditch in 1880. By JAMES
SMAIL, F.S.A., Scot.

THERE is no great wall, or road, or ditch, of ancient date about which so little reliable history is extant, as the Catrail or Picts-Work-Ditch. In point of fact it has no authentic history. Its ancientness is undoubted; and although historians do not agree on several matters connected with it, no disputes have ever arisen in which its antiquity was called in question. No war-
weapons, implements, coins, or other relics have ever been found in its course, or in the forts or camps, so-called, through which it runs, by which its makers could be traced, or the exact time fixed when it was made, hence the difficulty of historians to give definite information regarding it. And yet its length from end to end is, or was rather, 48 miles—in Selkirkshire 28, and in Roxburghshire 20. The crow-line length of the Catrail in the former county is only 18 miles—from Torwoodlee “Rings” to Hoscote; and from Hoscote to Wheelrig at the Peel fell, on the edge of Northumberland, the crow-line (in Roxburghshire) is nearly 15 miles. The Catrail must thus have been well known to a large number of inhabitants of the Borders for many generations; and it is therefore both odd and perplexing that so little is known of its history. So far as I can learn it is not mentioned in any of the many Royal and other Grants or Charters of lands in its vicinity. My friend, Mr Craig-Brown, of Selkirk, who is writing a history of Selkirkshire, and who has had access to nearly all the charters and papers of the county families, has informed me that he has in no instance found the Catrail mentioned in any of these documents; and yet there are miles of the Catrail still strongly marked in the county.

WRITERS ON THE CATRAIL, OR PICTS-WORK-DITCH.

Alexander Gordon, A.M., was the earliest writer on the Catrail, in “*Itinerarium Septentrionale*,” London, 1726, fol. He thought it a boundary-line of the era of Severus, between the Roman Province and the Caledonians. He seems to have been the only writer who traced it nearly from end to end. He made several mistakes, however, as to places, and in a few instances he seems to have travelled backward a little; and he names some places where he said he found it on which the Catrail could not

possibly be found, the places named being miles from its track. He must have erred in the latter case from having taken some similar roadway for it; and in those days he would have no maps indicating its course. Many old road-lines similar to the Catrail exist at the present day, both in its vicinity and on other parts of the Border hills, which, but from maps and enquiries made on the spot and at well-known old residents, might have been looked on as sections of Catrail by the writer.

He states that "the first vestiges of this work appear at this day about a mile to the west of Gallosiels, in the shire of Selkirk, and two from Melrose in Teviotdale, at a place called the Rink Hill." Every one now knows that the northern end of the work, "the first vestiges," still very deeply marked, and undoubtedly Catrail, is on the wooded hill above Torwoodlee mansion, at Galashiels, fully three miles from the Rink hill. But he adds a little further on, that "the whole length of this boundary from Pirlie fell (Peel fell) in Cumberland (the Peel fell divides Northumberland and Roxburghshire) to the town of Gallowshiels is 22 miles; from the last of which places I am convinced, Gallow water served as the rest of its limit." Many parts of the Catrail have disappeared since he visited it; but what remains of it from Rink to the southern end is on the whole, and with the exception of the errors referred to, very accurately laid down by him. Some parts of it are nearly as deep and broad as at the time of his visit, nearly 160 years ago. The names of some of the hills and burns given by him have now passed away; and he names several farms or places of abode which are totally unknown at the present day; but this, doubtless, has arisen from the fact of many farm dwellings and shepherds' houses of his day having been removed, and their names and respective situations forgotten. But although he pretty accurately describes the Catrail and gives its measurements with apparent care, it is a matter of fact that very many well-defined stretches of it, which he saw and described, are now totally obliterated.

Chalmers, in his *Caledonia*, gives an account of it; and the late respected Rev. Dr Douglas, Galashiels, spent some time in tracing it, and he furnished Chalmers with data as to its line of route and its markings. One writer, however, the late Mr Norman Kennedy, Hawick, an intelligent and shrewd observer,

familiar with the Catrail in his district, says of Dr Douglas, in connection with his account of it:—"There can be no doubt that he must often have been imposed upon, while making enquiries of individuals resident in its neighbourhood, * * * as many isolated trenches running in a contrary direction are still pointed out as portions of that work, although unconnected with it; and as they are identical in appearance, his ignorance of the locality would prevent him detecting the unintentional mistake." This, in the present writer's opinion, seems probable.

Chalmers calls the Catrail a "dividing fence between the Romanised Britons of the Cumbrian kingdom and their Saxon invaders on the east."

Sir Walter Scott in his *Border Antiquities*, 1817, p. 23, says:—"All good antiquarians allow that the remarkable trench, called the Catrail, was intended to protect the native inhabitants of Strath-Clyde from the too powerful Saxon invaders." In a letter to George Ellis, he speaks of Drumelzier, many miles above Peebles, as on the Catrail route. It seems somewhat singular that Sir Walter had paid little or no attention to the "remarkable trench," which he could almost see from his windows at Abbotsford, and is still strongly marked on the hills on which he delighted to roam behind Yair.

Here is a rather sad paragraph:—"This was for him the last year (1825) of many things; among others of Sybil Grey, and *The Abbotsford Hunt*. Towards the close of a hard run on his neighbour, Mr Scott of Gala's ground, he adventured to leap the *Catrail*—that venerable relic of the days of—

‘Reged wide

And fair Strath-Clyde.’

He was severely bruised and shattered; and never afterwards recovered the feeling of confidence without which there can be no pleasure in horsemanship. He often talked of this accident with a somewhat superstitious mournfulness."—*Life of Scott*, vol. viii., p. 105.

Mr Wilson in his *Annals of Hawick*, 1850, gives it a notice similar to Chalmers.

Mr Alexander Jeffrey, the historian of Roxburghshire, writes at considerable length on the Catrail, and other peculiar and ancient roadways of the Borders, including the Devil's Causeway, the Maiden Way, and the Wheel-Causeway, the last of

which (by the way) passes the south end of the Catrail, and is still, 1880, strongly marked, and is in shape the exact counterpart of several sections of the Catrail. He states that these "war fences were constructed about 446;" but like all other writers on the subject, he cites no authority for his opinions. He, however, states that "the honour of the discovery of this important remain is due to Gordon, who visited this part of the kingdom in 1720;" and that "nearly ninety years passed between Gordon's survey and that of Dr Douglas." He further says: "The object of this ditch may be learned from its name: *Cat* signifying conflict or battle, and *Rhail* a fence; a war fence or partition. This gigantic undertaking was carried through by the Ottadini and Gadeni people after the Romans left, to protect themselves and possessions from the Saxons, who were advancing upon them from the north and east. It would also serve as a screen, under cover of which the tribes could pass from one place to another without being seen by the enemy. In the same way their flocks and herds might be conveyed without being observed."

The late Mr William Kemp, Galashiels, wrote an excellent paper on the line of the Catrail, in the neighbourhood of Galashiels; and he noticed at some length the so-called forts on its route.

The late Mr Norman Kennedy also wrote a very good paper on it, particularly in connection with the Roxburghshire part of it. The paper was read at a meeting of the Society of Antiquaries, Edinburgh.

The writer of the account of Cavers parish in the "New Statistical Account of Scotland" bestows only a few lines of notice on the Catrail; and Dr Chambers, in his excellent History of Peebleshire, gives a short account of it. Mr Hardy has, besides, informed me that Dr J. A. H. Murray had, many years ago, read a paper on the Catrail to the members of the Hawick Archæological Society, but this paper I have not seen. It is also adverted to in Chatto's *Rambles in Northumberland*, pp. 171-175, which furnishes also a reference to other works of the kind elsewhere.

THE CATRAIL, OR PICTS-WORK-DITCH, AS IN 1880.

It may be right to mention here, that I passed ten days, and several parts of days in tracing, and trying to trace, the Catrail

from end to end, and that in this I was greatly aided in my researches in Selkirkshire by my friend, Mr Craig-Brown, who accompanied me during four days; and my friend, Mr Elliot, Hollybush, who was with me five days, four of them in Roxburghshire and one in Selkirkshire. The Ordnance Survey and other maps were used; and found very useful. The Catrail, as laid down in the Ordnance Survey maps of Roxburghshire is, in my opinion, correct, or nearly so; but in some places it is not correctly indicated in the Selkirkshire maps. This must have arisen from the surveyors having been misinformed by residents; for of course the surveyors in many cases as to land-markings had simply to enter what they were told by shepherds or others.

The northern end of the Catrail is on the wooded hill fully half-a-mile above Torwoodlee mansion-house, two miles from Galashiels. There has been a large camp on the spot, and the deep trench of the Catrail partly circles the camp, which is itself circular; and many stones belonging to it, and deep indentations connected with it may still be seen. This camp, with the accompanying part-circles of the Catrail, has long been locally called "the Rings." The Catrail cannot now be traced down the field leading from the camp; but it is faintly traceable in Torwoodlee policy. It passed Redburn foot into the wood opposite The Birks gate; and at the south end of that wood it is clearly and deeply marked; and is quite visible from the public road leading alongside the wood. From this wood its line ran towards Knowe Park, and on to Mossilee homestead, which stands on its track, and a few hundred yards south of the homestead it appears on the edge of the field road, and is nearly filled with stones. Twelve years ago its track was plainly seen by me in the field adjoining the steep field leading up to the young plantation on the north end of Hollybush farm, through which the public footway leads to Fernielee. On the steep field mentioned it is plainly marked. It leaves the field and enters the wood through which the footway above mentioned passes. After crossing the wood it leads into the field above, and is easily traced along two fields to an old quarry at the end of the wood on the hill immediately above Hollybush farm-house. In this wood it is very deep and wide; and it is nowhere in its course more strongly marked than here, being 20 feet wide and nearly 6 feet in depth

at the deepest part. Twenty-three years ago, the late Major Scott of Gala planted the woods now on the heights along Hollybush farm. They were planted for shelter for the farm, but Mr Elliot, the tenant, suggested to him that by carrying along a strip of the plantation on the line of the Catrail, the ditchway might thereby be preserved for many years. The hint was acted on, and hence the still well-defined Catrail on these heights.

From the last-named wood it cannot be traced for several hundreds of yards; but it comes strongly into view on a field near the British Camp on Rink hill. This section of the Catrail can be seen plainly at a distance of several miles. It apparently did not enter the camp; and the late respected tenant of Rink, Mr Riddell, who had lived many years there, told me he did not think it had entered the camp; but Mr Jeffrey affirms that it did. Its line passed along the slope below the camp about 100 yards, and it is very deeply marked in the wood fully 100 yards below the camp.

Although I do not mean to notice the very numerous so-called camps, forts, or resting-places in the track of the Catrail, the remains of the fine camp on Rink hill must not be passed without a word. It is British, and the well-grown fir wood planted over it, about 1812, for the double purpose of protecting the camp lines, and affording shelter to the flocks and herds, has helped much to preserve its remains. I do not know of any camp so well marked. It is an oblong circle 90 yards by 60 within the walls. It had two defence ditches; and even now the fosse is upwards of 30 feet wide, and in several places about 20 feet deep. Hundreds of tons of the old wall stones are lying moss-covered in the fosse.

From the cultivation of the land the Catrail is not traceable from the wood below the Rink Camp to the Tweed, which it crossed at Howdenpot burn foot on to Sunderland Hall grounds.

The late Major Plummer, of Sunderland Hall, wrote me in February, 1879, that "The Catrail can be traced on Sunderland moor for about 700 yards." After leaving the Tweed it passes along a wood on Sunderland Hall grounds and then enters the "moor," most of which is now under cultivation. Mr Craig-Brown and I traced its line through the lands of Sunderland Hall on to Linglee hill, where, near its top, it is very deeply and distinctly marked. This part of the Catrail, from Tweedside to

where it is lost on the soft land on Linglee, measures a mile-and-a-half; but much of it is very faintly marked, and will shortly disappear. After leaving Linglee hill it disappears on soft ground for about three-quarters of a mile; after which we caught it up without difficulty and followed it with certainty, although it is not deeply marked, for many hundred yards. At this part it crosses a portion of the Peatlaw, and a wire fence runs alongside of it for several hundred yards; and near this fence it crosses the bridle-path that leads from Yair on Tweed to Broadmeadows on Yarrow, at the spot where Sir Walter Scott and Mungo Park bade farewell, just before the latter last sailed for Africa. The incident is mentioned by Lockhart in his *Life of Sir Walter*.

From the bridle-path mentioned, we traced it a mile on the Three Brethren hill; and after losing it we also ourselves got lost, from a dense fog, which darkened all around. After a good deal of bewilderment, for the pocket-compass of each seemed to point the wrong way, we found ourselves when the fog cleared, about three miles out of our reckoning.

After it leaves the Three Brethren hill, behind Yair about two miles, it runs westward for about four miles, nearly as high as the watershed between Tweed and Yarrow, but on the Yarrow side of the watershed. It then reaches Wallace's Trench where it is fairly well marked; but in the space between Three Brethren hill and this there is very little of it to be found. From Wallace's Trench until it reaches a part of the farm of Whitehope on Yarrow, nearly five miles, almost no traces of the Catrail can be found. The course from Wallace's Trench was westward on to the south-east end of Minchmuir, "the hill of hills," along the ridge of which a part of Montrose's defeated army retreated from Philiphaugh. It then curved to the south and crossed the uplands through Lewinshope and Tinnis to Whitehope hill. Mr Lindsay, the respected tenant of Whitehope, kindly accompanied us to the Catrail; and it is very plainly marked on his hill for a few hundred yards. He pointed out where it was said to pass in the direction of Henhole and Minchmuir; but as I have said, almost no traces of it, if any, can be found in that direction. He also pointed out its reported line towards the Yarrow, and the same on the further side of the river.

The distance, southward, between the Catrail on Whitehope and the Catrail on the north of Girnwood farm, where the shires of Selkirk and Roxburgh meet, is twelve miles, "across country." Mr Craig-Brown and I spent two long days on the reputed track of the Catrail in this locality, or rather on the first nine miles of it southward of Whitehope. We had with us written accounts of its track, and maps old and new to guide us ; and we had also the company and guidance over a goodly part of the distance, of farmers or shepherds who had known the district from boyhood ; but, sad to relate, the Catrail has now totally disappeared from that wide stretch of country. We at times, but only two or three times, came to lines that we thought might turn out Catrail ; but in no instance were we satisfied that we had really found it. Our first day was spent on the track between Ladhope and Gilmanseleuch on Yarrow and Ettrick waters respectively ; and the next day we traversed the same district from Sundhope to Gilmanseleuch ; and from Gilmanseleuch southward to Clearburn Loch. We faithfully and literally wandered, often zig-zag, over these fine hills ; and had both weather and guides in our favour for finding the ancient way ; but it is not to be found. Seventy years ago, Dr Douglas was told by the farmers in Ettrick Forest, when he was tracing the Catrail, "that the remains had greatly diminished in their remembrance, and that the traces were becoming less visible every day. Nearly ninety years passed between Gordon's survey and that of Dr Douglas." Most of the land in the part under notice is very soft, hence the tendency of the Catrail to become so rapidly less visible ; and here it has at last disappeared.

The line from Whitehope to Clearburn Loch ran through Cat-slackburn, Yarrow Feus, then crossing the Yarrow it ascended Sundhope Height, and after crossing the very top of Singlee Burn it descended and crossed Inch Burn, and Gilmanseleuch Burn, and entered the Ettrick at the School. It then ascended the west side of Deloraine Burn, and passed near the foot of the Stanhopelaw over to Clearburn Loch, also on the farm of Deloraine.

From Clearburn to Henwoody, on the north of Girnwood, the distance is somewhere about three miles. In Gordon's time, even, there seem to have been no traces left of the Catrail in this part of the country ; for he says "passing hence

(from Stanhopelaw) to the southward I lost its track for two (5?) miles, the ground being full of bogs;" and my friend, Mr Scott, Girnwood, who is familiar with the Catrail, corroborates the above, there being no vestige of it in the place indicated.

The Catrail enters Roxburghshire at Hoscoat Burn, but after a nearly two miles course again crosses a narrow point of Selkirkshire at Hoscoat, and then enters the former county. From Hoscoat Burn, along the lands of Girnwood the track is wider than on any other part of its course. It is fully 28 feet wide, including the ramparts or ridges on each side. This part of the road has been long in use as a drove road, and from this cause it has perhaps become broader than it was originally made. The mound or ridge on one of the sides is much higher than the one on the other side. Altogether it is a fine section of the old ditch-way in question; and except in two newly reclaimed fields at Girnwood homestead, its course can be traced without a break for a mile-and-a-half. It passes the gate at Girnwood farmhouse, and enters Hoscoat wood a few hundred yards below Girnwood. It is not traceable up Broadlee Burn; but to the east of Broadlee Loch it is very distinct, broad and deep, for upwards of a mile on Woodburn farm. From that point to Teviot water it cannot now be traced; but its course was south-south-east by Teindside Burn; and it again appears on the south side of the Teviot, about a mile-and-a-half behind Northhouse farmhouse. It there ascends the hill to Doecleuch, and is easily reached, as it is on the edge of the road leading from Northhouse to Priesthaugh. Mr Elliot and I were indebted to the hospitable tenant, of Teindside, Mr Govenlock, for valuable information; and he saved us some miles of rough walking, by telling us where to go. On Doecleuch, on Skelfhill farm, the Catrail measures from the centre of each side-ridge, 18 feet in width, and it is $4\frac{1}{2}$ feet in depth. From Doecleuch it cannot now be traced to the Whitehillbrae Hill, on the south side of Allan Water, where it is next visible, the intervening land being partly under cultivation and the moorland soft. It ascends Whitehillbrae Hill, a steep one, in an almost direct line, and is very distinct there, and can be seen from a long distance. Crossing the ridge of the hill it descends, and enters a flattish moor near a well-marked camp called the Pyot's Nest, which is fully half-a-mile west from the peak of Penchrise Pen.

Though pretty tired, and knowing we had still some six miles to travel through deep sprot and bent-grass, and across mossy land, sometimes mid-body deep among fern or wet rush-clumps, we could not resist climbing to the peak of this remarkable hill; and the view from it down Teviotdale amply repaid us for our hard work. The peak or summit of Penchrise is very small; but it has been strongly fortified. Some 20 yards below the peak two well-made ramparts, what would now be called half-moon batteries, are nearly as plainly marked now as they could possibly be when made. All this part of Penchrise, though grass-covered, is composed of rock to within a few inches of the surface, so that ramparts once made on such a place, were certain to last for ages.

Returning to the subject of the Catrail: from the summit of Penchrise we had a fine view of it in the direction we had to travel. From a point near to the before-mentioned Pyot's Nest, it runs through some flattish soft land for about a mile, on which it is traceable only here and there. It then ascends the Pike hill, called the Carriage Hill by Gordon, 1516 feet in height, in a broad deep straight line; and passes over its highest point and descends on the other side in the same way. This is by far the best part of the Catrail at the present day. It is so deeply marked, and from this, and the Pike hill being so high, it can be seen distinctly six or eight miles off. Mr Elliot and I saw it as plainly as the Pike itself from Mid Hill, some five miles to the south of it. Gordon says of it here: "It mounts the Carriage Hill, and is more conspicuous here than throughout its whole track, being 24 and 26 foot broad, and very deep; the ramparts on every side, 6 or 7 foot in perpendicular height, and each of them 10 or 12 foot thick, the whole being great and visible." The above measurements are much too great for this part of the Catrail at the present day. But from the hardness of the Pike hill, and from the depth and breadth of the Catrail still to be found there, I have no doubt whatever but its lines will remain clear and strong on this hill for hundreds of years to come.

Next day Mr Elliot and I crossed from his farm, Langburnshiels, over the ridge of Shankend hill, and caught up the Catrail at the southern base of the Pike. From that point we traced it with ease to Roberts-linn, a distance of nearly three miles. We came to a few short blank spaces, where the land

was very spongy, but the blanks were so diminutive that it may be said to be almost continuous for the above named distance. At the foot of the Pike it crosses Langside Burn, and then passes by the east, at the foot of what Gordon calls "the remarkable Hills called the Maiden Paps"—a well-known land mark, 1,677 feet in height, being a spur of Greatmoor, 1,964 feet. We walked to the top of the first named height, which is remarkably steep, from which we had a fine view of magnificent and almost countless hills, rising tier on tier as far as the eye could reach. After passing the Maiden Paps the Catrail crosses Harwood Burn, where it is lost for a short space, and it then runs through a somewhat flat bit of ground lying between Shankend hill and the Leap Fell, until it reaches the Waverley line of railway, which cuts through it about a quarter of a mile from the Shankend Railway Tunnel. It can there be seen from the windows of a passing train. From the railway it runs in almost a direct and in an unbroken line to Roberts-linn, on Langburnshiels, at the Limekilnedge road. It is plainly marked in all the flat land just mentioned, but is shallow, and only from 12 to 14 feet broad. Even where it is level, the line is easily traced, for along its whole course the bent grass is lighter in colour on its track than the surrounding grass; and, on the other hand, on cultivated land, where much soil has been ploughed into its track the grass is generally greener on the line of the Catrail than on the surrounding parts. Snow also lies longer on even the flat parts of the Catrail than on the other flat land; and in "a griming o' new fa'en snaw" the flat parts are more easily traced than at any other time.

From Roberts-linn to near the Abbey, a sweet spot at the foot of Cliphope Burn, a distance of 4 miles, it is not now traceable. We came to only one short part of it; and I was not really certain that it was the Catrail, near the very top of Laidlerhope Burn—north side. At Cliphope it is very probable that the Catrail has been turned into the "Galloway road" for some distance, and the same on Dawston-rig, for that road is in the track of the Catrail.

The Galloway road was used for a long period of years as a highway for carrying coal to Hawick from the edge of England. The coal was carried in bags on the backs of the well-known Galloway ponies—hence the name "Galloway road."

It was a common thing for one man to drive a string of 8 to 10 of these ponies, coal-laden, across the hills on this road, which was much used for this purpose up to the early part of the century. A similar mountain road, used for a like purpose, runs from Northumberland across the fells by Kale water head and Riccalton to Jedburgh.

At the Abbey, the Catrail is visible and broad, and the road above-mentioned is on its exact line. Across the Dawston-rig we could not find it, although the southern part of the Dawston-rig is hard land. We found it, however, at the southern edge of the Dawston-rig, where it dips into the Liddel water; and here it makes an abrupt curve, and runs to the north-east, up the land called Wormescleuch, and crosses the burn of that name on to Wheelrig, where it is strongly marked for a few hundred yards. Here it terminates, in the neighbourhood of the site of the Wheel Church, but not before it is crossed by the Wheel Causeway or Roman way, which runs north from this by Needs-law and Wolfelee, and south "alang by the Dead Water Stank." The Peel tower, at the foot of the Peel Fell, stood on the other side of the Peel Burn—opposite this southern end of the Catrail. Where it ends there are several curves and lines of a peculiar kind, the lines resembling the Catrail in form, and the whole much like the lines and curves, "the Rings," at the northern end of the Catrail at Torwoodlee. I was much aided, at this part of the Catrail, by my friend Mr Scott, the proprietor of Peel; and also by one of his shepherds, who has been long resident at Wormescleuch.

THE WHEEL CHURCH.

I must say a few words about this church of ancient days, although there is not a stone of it standing, nor yet are there any stones lying where it once stood. Its foundation lines are, however, quite as distinct, as is also the form of the churchyard, in which neither grave nor tombstone can now be seen, as if the walls of each were still erect. The fine short dark-green grass on the site of the church and churchyard shews the exact size and shape of each. The church was an oblong square, some 20 feet long; and the churchyard is on the west of the church site, but adjoining it, and is circular, a wheel in form. The writer of the Old Statistical Account states that the Wheel Church was "pretty large," a decided error. Jeffrey says: "After the sack

of Berwick in 1296, Edward I. performed a pilgrimage to St. Ninian's shrine in Galloway, and lodged two nights here, one night in going and one night in returning.* It is difficult at the present day, even to imagine where the worshippers in this church lived." The "Old Statistical Account" (Rev. Mr Arkle), 1793, also states that, "Many grave stones appear in the churchyard, yet when standing on this spot, at this time there are only three farm houses in view, taking in a circle of many miles."

In reference to these quotations I may remark that it is perfectly evident, on the spot, that the Wheel Church has been very small; and as I have carefully gone over the immediately surrounding land, and have found the remains or sites of a considerable number of dwelling-houses on Wheelrig, in the neighbourhood of the church site, I have no doubt in my own mind that the worshippers lived on Wheelrig, and in some of the farm places near it. Friends of mine, who know more than I of the place, are of the same opinion. There must have been a hamlet at Wheelrig. It is a sweet and very solitary spot, well sheltered by the surrounding mountains. But of the people who lived and died there, nothing whatever is now known. A small field adjoining the site of the church has been walled round; and many of the stones show that they have of old been under the mason's chisel. These stones have, doubtless, been taken from the ruins of the church and the neighbouring houses. We saw one half of a quern stone at the side of this field. It was of a very large size, and might once have been in general use among the inhabitants of Wheelrig. It is of too large a size to have been for the sole use of only one house or family of the period.

THE NAME—CATRAIL.

Writers do not all agree on the derivation of Catrail. Chalmers in his *Caledonia* calls it "the dividing fence" or "partition of defence;" Jeffrey "a war fence," stating that *Cat* signifies conflict and *Rhail* a fence. Then we have elsewhere *Cater* a camp, and *Cad* a ditch, with *Rhail* in each case given as a fence. The learned Mr Mackenzie of Delvin says: "That the newly discovered Boundary was originally designed as a limit of separation is evident from the etymology of *Catrail*; which comes from

* ["On the fifteenth day, being Wednesday (May 23), Edward went to Jedborough; on the Thursday to Wyel, on the Friday to Castleton, on the Sunday afterwards back to Wyel; on the Monday to Jedborough."]—*Journal of the Movements of King Edward*, Documents Hist. Scot., ii., p. 27.]

an old Highland word signifying *Vallum separationis*, a wall or ditch of separation."—Gordon, p. 104. Gordon also states, when he speaks of it as crossing Borthwick water, he having traced it across Selkirkshire to Borthwick water head, on the edge of Roxburghshire, "here it is known by the name of the *Catrail*, but northward of this place it is called the Picts-Work-Ditch." In a ballad describing a Border fray one personage is described thus :

"The next ane was ane careless scemp,
Moss-mudded head and tail ;
Ye might trowed him the ghaist o' a' gurlly Pict
Wha had sheughed i' the grit *Catrail*."

Then we have several places in the neighbourhood of the *Catrail* bearing significant names. A few miles to the north of Torwoodlee, we have Muckle *Catpair* and Little *Catpair*, two estates. On the farm of Tinnis in Yarrow Water there is *Cat Crag*; and the *Catrail* crossed the higher part of this farm. Further on the *Catrail* crossed the *Catslack Burn*; and close to Yarrow Feus there are some indentations called the *Cat Holes*. In Roxburghshire the *Catrail* crosses Harwood Burn, into which falls *Catlee Burn*.

And may not "the Rings" at the northern termination of the *Catrail* have by the name a colateral connection with the *Wheelrig* at its southern termination? Rings and wheels are in some cases somewhat similar terms in the south of Scotland. Besides, as I have before stated, the vestiges of *rings* or *wheels* at each termination of the *Catrail* exhibit a verisimilitude. Of course the Wheel Causeway is ancient, and crosses the *Wheelrig*, and may have been the means of originating the name both of that part of land and of the Wheel Church. But who can tell? One writer thinks the Wheel Causeway was so named because its centre was rounded, and composed of large stones which sloped downward toward the respective edges of the road something like a wheel; and another states that the name was applied because it was a road along which a machine with wheels could travel.

The Maiden Way which "leaves the Roman wall between the Solway and Tine," runs many miles and then crosses Dead Water on to *Wheelrig*, where it assumes the name of the Wheel Causeway. There is, therefore, doubtless some perplexity as to the origin of the names "the Rings," *Wheelrig*, Wheel Church, and Wheel Causeway, and at this time it would be a very difficult matter to clear up the peculiar ramifications. Many theories

could be deduced, because there are data in plenty, but of such a complex and peculiar nature, that theorists, I suspect, would probably have to romance a little in order to bring matters to a logical conclusion.

WHAT WAS IT MADE OR USED FOR?

This is a point on which great diversity of opinion has been shown. After reading the productions of many writers on the *Catrail*, I have had no difficulty in coming to the conclusion that several of them have simply followed the theories of those who preceded them. A considerable number of writers disagree as to what it was made or used for, and they also differ in their accounts of its width and depth. Those writers who looked on it as a defence, notice conspicuously the numerous forts and tower-sites along its course, while some of those who considered it to have been a boundary line, and others who thought it was simply a ditch-road used for peaceably driving cattle and sheep from place to place without exposure to marauders, say next to nothing about the forts, &c., along its lines.

Unless perhaps in the neighbourhood of Galashiels, I do not think the forts and strengths much more numerous in the vicinity of the *Catrail*, than on several of the Border districts known to me.

I have little or nothing of a theory to offer on the subject of its use. I certainly disagree, however, with Gordon and others, who thought it a boundary line between either kingdoms or tribes. I have traced its course on a map which I have sent to the Club's respected Secretary, Mr Hardy, and anyone examining it will at once see that as such a boundary line it would have been most eccentric, and indeed absurd. As an illustration I may mention that the *Catrail* so curves in its course between Torwoodlee and the south-east point of Minchmoor that it describes the outline of a large *cul de sac*. The crow-line from Torwoodlee to the place indicated on Minchmoor is 6 miles in length, and the *Catrail* line is nearly 12, and it must be remembered that in that course of twelve miles, besides making the general curve alluded to, it, in many places, and over a large portion of the distance, shows just about as many windings and twistings as an ordinary parish road. The smaller curvings were doubtless made in most cases to avoid rocks or damp, very wet land.

As a defence it would present a strong barrier to an enemy on either side of it, but the total absence of all war-like weapons or instruments in or near its precincts, for none have been found, goes some way, at least, to show that the purposes of warfare had not been especially considered along its route.

For my part, I am inclined to think that it would be used much oftener as a road than a defence, although I also think, from its construction, it in many places and cases might have answered well for both. In those wild marauding days the residents in the district might find it useful and convenient to have a secret road of this kind, more for the peaceable removal of their herds and flocks from place to place, than for enabling those living on the one side of it to protect themselves from those on the opposite side. Besides, under its covert of from 6 to 12 feet in depth, and hidden by its many windings and curvings as already described, large numbers of men, for war or other purposes, would, with a little caution, be able to move along it unseen, unless from distant points here and there, chiefly on the hills.

What many writers call forts on its course, I am inclined to call resting-places or shelters; but those were so formed and placed as to enable those under their protecting walls to defend themselves when necessary. These shelters have been in most cases very small, and are not by any means to be confounded with forts or camps like those at Rink, Pyot's nest, or Dawston's Rig on Liddell water-side, and others. It must be remembered, too, that had the Catrail been made chiefly as a defence, it would have proved a better barrier had it been constructed on the flat lands, where it would have been filled with water; whereas it has been, as a whole, run through wonderfully dry land, which would make it all the more useful as a road, along which to drive sheep and cattle.

In the neighbourhood of several of the forts or shelters there have been small spurs of Catrail thrown out, and such spurs have also in a few instances been made where no resting houses or forts had been placed. These spurs would answer as sidings, into which flocks could be driven, either to allow flocks travelling in another direction to pass, or for refuge in storms, or for a lair at night, or even for temporary concealment. Traces of the sidings can be seen at Hollybush, Rink, Girnwood, Wormescleugh, and

other places. They have puzzled several antiquaries ; and I, of course, admit freely that my idea as to their use, and the Catrail having been made and used chiefly for protecting from marauders the flocks and herds of residents when driven from place to place, may be just as incorrect as the theories of others. I am also aware, too, that several of the writers with whose ideas I do not agree were much better acquainted with archæology than I am. At the same time it may be considered in favour of my remarks that I have actually spent many days tracing the Catrail from end to end, and before doing so I had made myself conversant with all the writings I could get on the subject. I had also a supply of excellent maps, government and others ; and had, besides, the aid of my friends, Messrs Craig-Brown and Elliot, over nearly all its course ; and we had the pleasure also of receiving kindly aid from many intelligent and hospitable farmers, and from many shepherds both in Selkirkshire and Roxburghshire. On the whole, I have endeavoured to collect all the information I could on the subject of the Catrail ; and I regret that my work has really brought out nothing very new or definite about it. I have written from what I saw, which was an advantage.

I must state that over and above the gentlemen already referred to, I have been greatly indebted to my friend, Mr Hardy, for data ; and for the many letters he has written first and last on the subject, I beg to thank him heartily.

I may close by stating that any one interested in the Catrail, and fond of rough upland walking, would, in the summer months, find enjoyment in tracing its lines through the fine hills of both counties. I am certain that the delightful wanderings over hill and valley, that my friends, Messrs Craig-Brown and Elliot and I had, in trying to trace that wonderful and mysterious ditch-way, will ever be pleasantly remembered by us all.

LIDDESDALE "KILN POTS."

In Upper Liddesdale, on the estate of Peel and on Myredykes farm, which is divided from the former by the Peel Burn, there are a large number of peculiar holes or hollows locally called "Kiln Pots." They are very often found singly ; but in some places they form a sort of chain, and give the ground a very peculiar appearance. The hollows are many of them of the size

and shape of a huge circular potato pit inverted, viz., a concave, and some are irregular in shape, but all are of course hollow and they vary in depth from four or five to about twelve feet. But change is always in operation, though slow in its nature; for moderately deep holes are, almost imperceptibly it is true, gradually growing deeper, and new hollows are ever and again beginning to show themselves. The grass or heather and surface soil gradually sink along with the soil or rock beneath; and the hollows therefore are either grass or heath-covered. Here and there an irregularly-shapen hollow shows a deep side hole filled with delightful spring water, and water can be heard running beneath many of the "Kiln Pots." The cause of this peculiar sinking of the land is water. The rock below is mostly of limestone or soft sandstone; and on those rocks over a long course of years there has been a constant action, more or less, of water, moving under the soil; and as the softer parts of the rock decay the land, being soft, also sinks. When the "Kiln Pots" are full of melted snow it is rather a dangerous affair to walk amongst them. Shepherds, however, know them well, and easily keep clear of them.

On the Effects of the Winter of 1878-9 on Animal and Vegetable Life on the Borders.

BERWICKSHIRE.

1.—*Oldcambus by Cockburnspath.* By JAMES HARDY.

THE inadequacy of my own limited resources for drawing up a Report on the influence of the severe and long-continued winter of 1878-9, over a wide district, has induced me to have recourse to those members of the Club who had experienced its effects, or to others who took an interest in such inquiries. I will not attempt to summarise the returns, or compare them with other statements. Dr John Duns in the "Transactions of the Royal Physical Society of Edinburgh," Mr J. A. Harvie-Brown in the "Transactions of the Natural History Society of Glasgow," and Col. Drummond Hay and others in the "Scottish Naturalist," have made excellent contributions applicable to various parts of

Scotland, and what is now presented is only a portion of an extensive subject, which would require some other labourer to make a combined view of.

I will chiefly confine myself to my own observation of passing events, and with this I shall incorporate my notices on the arrivals of migrants, as these depend very much on the temperature prevailing when they make their advent, and that again as a resultant upon the weather of the antecedent months. The sufferings that animals endured, I attribute chiefly to the long continuance of extreme cold, rather than to a deficiency of what has been called a natural provision for their support. Hips and haws were left untouched to wither on the branches, while ivy berries, a very full crop, clustered on the twigs in sheltered places, till they dropped disregarded into the soil. Worms, shell-snails, slugs of all sorts and degrees, and *Tipula* grubs, were most abundant, had there been any birds left to disengage them from their retreats, when the ground became mollified, and the snow began to dissipate. The rigorous cold had no appreciable effect in diminishing the numbers of *vermin* of this sort.

On the 9th October, 1878, the wild ducks began to resort to the sea for their winter quarters; 60 being counted. After a heavy gale on Oct. 31, two fieldfares arrived; and the sea-pipits had been leaving a few days previously. On Nov. 5, after a series of northerly gales, considerable flocks of fieldfares frequented the old grass fields, which were increased on the 11th and 12th, on which last day snow fell. Redshanks and lapwings, as if pre-admonished, had already resorted to the sheep folds. Nov. 9. Wild geese passed from the north. Nov. 14. Fieldfares continued to frequent the fields, and on that day a single snow-flake, much exhausted, was observed on the post-road near the Pease Bridge. Capt. Norman noticed two snow-flakes on the 15th, on the road on Halidon Hill, Berwick. Nov. 18th, the weather was milder, and the bands of fieldfares were joined, on the fields, by wood-pigeons. Three grey-wagtails, the last for the season, flew sportively round a pond, in beautiful feather; grey linnets had not then left. Towards the end of the month, the weather became milder. A wren and dipper were noted on the 20th; fieldfares had disappeared on the 21st, and birds on the coast became few; red-breasts and sea-pipits were on the sea-banks on the 22nd. Dec. 4th, the frost commenced, and on that and the previous day, the fieldfares began resorting to sheep-folds and recently-ploughed fields. Dec. 9th, snow-storm commenced, and continued more or less on the 10th, when in the evening great assemblages of fieldfares arrived from the surrounding vicinage, to roost among the furze in the lower part of Oldcambus dean; these were mingled with thrushes and blackbirds. The metallic tinkle of the snowflake's call-note was heard, and a flock passed at gloaming. I was not abroad every day, but on the 14th the snow lay deep on the ground, and

extended in one continuous sheet to the sea-side, except where washed by the tide. There was a keen frost. Fieldfares in want of insects and worms were greatly distressed, and from their dishevelled feathers appeared to be pinched with the frosty air. Many of them kept in the folds all the day, hollowing out with their bills turnips that had been broken by the sheep; or fluttering about weakly; or fighting with each other, for the fragments picked out. Others were turning up the soil, which the sun had thawed on warm inland banks, or on the coast. In these last resorts the redwings were mixed with them, reduced to a still more pitiable condition, tamed by starvation so as to allow any one to approach them; either hopping just to get out of the way of the observer, or flying a short distance, and alighting with dependent wings, when they appear like two birds instead of one, among the snow. The fieldfares were still able to maintain a bold flight. Two birds in beautiful feather and fair condition were picked up dead, although this was only the fifth day of the storm. The thrushes were still procuring shell-snails by wall-sides. The grey linnets had left in a body at the setting in of the frost. Redbreasts came to the windows to be fed, and entered houses. The green finches attacked the heads of burdocks in neglected places, and dismembered them for the seeds. Hundreds of wood-pigeons crowded to the fields of Swedish turnips, and stripped them of their leaves. Dec. 16th, more dead fieldfares; several mountain-finches came to the stack-yard. Dec. 17th, frost still severe. Fieldfares were following wood-pigeons in the turnip fields, to profit by the morsels they left, when picking holes in turnips. They were in great extremity, hopping before me, and tumbling over, with low dragging wings. Sometimes they would in flying, dash themselves down before me, as if supplicating relief. Passing a woodside, their mutilated remains, as well as those of the redwing, were strewn wherever a sunny bank had tempted them with an offer of support. The carrion-crows, dark messengers of fate, were flying about silently over the white frozen surface of the snow on the outlook for falling birds. Few were left undevoured; I even saw a thrush picking the bones of a fieldfare; but thrushes still contrived to procure snail-shells at the wall-sides and under furze. Three or four thrushes, however, had become victims to the cold, at a hollow on the sea-banks where sheep had rested at evening, having sought shelter among the flock, but in vain. Elsewhere other thrushes had succumbed, and had been eaten by the carrion-crows. Two blackbirds had perished. No missel-thrushes were seen here during the storm. To-day I witnessed a most busy scene on some of the sea-banks facing the south, where the sun's rays had sufficient efficacy to penetrate the frozen soil; hundreds of dusky birds, mostly redwings, were labouring away for the dear life; their little heads bobbing up and down, when assiduously digging for worms; or having exhausted one spot, they took short flights to break up untried ground, uttering as they rose a feeble call-note. This scene was presented for about half-a-mile along the sea-banks. There was considerable slaughter of redwings at a sandy beach, called Greenheugh shore, their carcases being piled up among the sea-weed landed by the tide. Starlings were associated with the redwings and fieldfares in excavating the banks for food; but for the most part they were taking advantage of the sea's retreat from off the kelp-weed

covered rocks, and were searching for food beneath the fucoids. Redshanks, curlews, and golden plovers also make this platform their feeding-ground. A young starling and two rooks were found dead. On this day there were several wrens observed stealing out and in among huge black blocks of rock, uncovered by the retiring tide. After this the wrens wholly disappeared from this part of the coast, and not a single bird has been detected since, where a visitor at all seasons was always sure of meeting with them more or less; and among the stone-walls that encircle the fields, from whose apertures they were constantly issuing, as if in lively pursuit of their prey, not a bird is now visible; and in our deans and woods the wren's silvery voice is seldom now heard. They probably migrated, as no remains have been observed in hollows or anywhere; except that Mr Muirhead at Paxton saw three during the storm, and afterwards found them dead in a hole of a wall. Dec. 25th, the snow remained undiminished. Four or five fieldfares alone survived in the turnip fields. The rest had either perished, or along with the redwings departed to another district. The ground under furze-bushes was strewn with the wings and skeletons of these birds. Starlings commenced to follow the sheep's evening resting-places. Rooks attacked corn-stacks, and wood-pigeons continued to flock to turnip-fields on the coast, where the leaves surmounted the snow; and when driven off, hid themselves on the sea-banks.

At Bowshiel during the storm, the servant lad used to set out the remains of his porridge for the cats, when three or four blackbirds regularly came to help themselves, whenever the weather was unusually severe. Starlings in vast numbers assembled in the stackyard; and greenfinches and chaffinches were very numerous.

Jan. 10th, 1879, the ground already sealed up, acquired a fresh coating of snow. A pair of fieldfares still persisted to frequent the sheep-fold; cushats continued their attacks on the turnip-foliage. Lapwings had gone; but the golden-plover still kept to the coast. Jan. 22nd, frost and snow still held the supremacy, curlews frequented the margins of inland pools; two fieldfares still shewed themselves, and a snowflake was heard. Three titmice (ox-eyes), hitherto absent, came to the window to be fed. Black-headed gulls were noticed on the coast to-day and on the 23rd. On the 23rd, eight eider ducks appeared at sea; there were two fieldfares still on the fold (it is to be remarked that the sheep were fed with cake in addition to turnips); and a flock of starlings came to the stackyard. Jan. 31st, the snow had been further increased on the 30th and 31st, but the curlews on the shore were uttering their spring-tide notes on the 29th and 30th, prematurely as it so happened. A kestrel hovered about, and a raven made his advent on the far-spreading white scene, marked at once by his great bulk, his breadth of wing, and his strong flight, interrupted at intervals by curious diving movements, and by his repeated hollow barks or croaks. Rooks were attracted to the carcase of a dead horse; and for several days had resorted regularly to feed among the sea-weed on the kelp-covered rocks, bared at low tide. Starlings clustering on the old grass leas, have sounded with their bills, for worm or lurking insect, all the projecting tufts of grass; and have diligently with the same object, turned over all the sheep-droppings. Several still

return to the stack-yard. Three blue-tits and three greater tits come to the window for crumbs. The blue-tit was victor over the other birds then being supplied with food, and to-day one snatched a piece of bread out of a robin's bill, and flew off with it. A missel-thrush seen to-day.

Feb. 1. Starlings now betake themselves to banks where the snow had been melted off by the sun; much congratulation going on among them meanwhile in their own language. Two long-tailed field-mice (*Mus sylvaticus*) found dead in the snow in the garden. Carrion-crow, for part of the day, now searches, solitarily, the bared rocks along the sea's most distant margin. No thrushes to be seen. Hawthorn trunks appearing above the snow have been barked by rabbits. Chaffinches fed on crumbs keep up a continual fight; the females are the boldest. There is no separation of the sexes in this quarter, during the winter, into separate flocks. Feb. 5th and 6th, a thaw, with the wind W. and N. W. A blackbird noticed at carrion. A sea-pipit appeared on bared ground. Feb. 7. The ground bared by the melted snow now revealed some of the places where the havoc had been among the birds, that had been unable to extricate themselves from the inclement conditions in which they had become environed, by not timeously shifting their position. The spot examined to-day was a burn side adjacent to a turnip-field, which finally terminates on the sea-side. Wings and remains of more than a score of fieldfares were come upon here, wherever there had been the likelihood of a piece of soft ground to perforate with their bills; and also among some whins on a sunny bank, where they had slept at night, after distributing themselves over the turnip-field by day. Besides these there were found dead here, one blue pigeon of the sea-stock, two or three redwings, one golden plover, two blackbirds, a partridge, and a woodcock. A water-hen had fallen a victim on the sea-coast. There were very few dead birds on the sea-banks. One of these was a thrush. To-day the larks were hovering in the air. Feb. 8th, snow disappearing; three blackbirds appeared in the garden, the only ones left?; and a thrush was afterwards seen in a ditch on the coast. Redshanks and curlews were scarce, but wild ducks were numerous in the sea. Black-headed gulls in their winter dress were flying about; also a great black-backed gull. Larks were again hovering about. In the evening a pair of corn-buntings appeared on the garden fence. No lapwings had been visible for a long period. Going along the coast northwards, I found at the Bents shore, a razor-bill, *Alca Torda*, driven in; probably in Dec. or Jan. I found another on Feb. 14; other two on Feb. 25; other two and a dead gull on Feb. 27, at other parts of the coast. Dead redwings and fieldfares were less numerous here, than on our more exposed situation. Feb. 9. The runs of the long-tailed field-mice about the roots and clumps of the cocks-foot grass, which were much eaten, and cut through, became now manifest at wall-sides, when freed from the deep snow. Long tracts by hedge-sides, and by the footpaths in the woods were, after the thaw, seen to be hollowed out, and ploughed by these mice; the poor animals when covered up by the snow, in order that they might not go far from their nest, being reduced to feed on the roots and shoots of the creeping kinds of grass. The woodmen call them "Shear-mice," perhaps from their cutting the grass into short lengths, to place in their retreats. A railway bank was noted to

be quite perforated with apertures, whence these mice had their outlooks during the storm. In a cottage garden in the wood, the crocus flowers and leaves were eaten by a short-tailed field mouse; and at Bowshiel I heard of nineteen that had been trapped, which had come out of an old wall to feed on crocus roots. I suspect the species was *Arvicola glareola*, Schreb. (*A. riparia*, Yarrell). It was described as having a dark back and a white belly, and a thick head. I know that this species eats cabbage plants in gardens. From Feb. 15th to 19th, more or less snow fell; and on the last of these days the snow once more extended to the beach. That small birds resort to the coast during a storm to feed is a circumstance that never happens here. In a storm of moderate severity, there is as much snow on the coast as inland, although perhaps it does not lie so long. In the coast stackyards there are not even so many birds in winter, as are congregated about inland steadings in the vicinity of woods. When birds disappear from inland localities, they probably migrate. To-day several missel-thrushes frequented the margins of pools, and appeared to be pairing; the sea-pipit also came to the open pools. A small company of golden-eye ducks (?) appeared in Siccar bay. Grey-backed crow, rooks, jackdaws, and common gulls were frequenting carrion. Feb. 20th. Thrush still visible in its favourite ditch. Feb. 25th, on a field partially bare of snow, a flock of about thirty snowflakes appeared, most of them dark-coloured. About forty-two golden-eyes (?) at Siccar-bay. Ploughing was tried, and two lapwings came in the evening to the ploughed ground. Wild ducks were still prevalent at sea. Feb. 26th, ploughing continued, although the air is still frosty; four or five lapwings are now on the ploughed portion; a missel thrush seen. Feb. 28th, fresher; curlews venturing inland; golden-plover heard; missel-thrushes singing; great collection of wild ducks all round the shore; no thrushes to be seen.

Mar. 3rd. Large flock of lapwings appeared; 170 wild ducks were counted off the rocky coast here. A thrush among furze; hedge-sparrow singing. Mar. 6. Several larks in small flocks in the fields, as if arriving from a different district; while the resident larks keep separate, and are in song. A thrush in song. Mar. 8th. Being at Dunbar, I noticed the remains of several dead fieldfares in the woods at Lochend; also near a plantation that shelters the farm house at Skateraw; and again near Linhead onstead. I heard that on one evening during the storm fieldfares repaired in a dense body to the shrubbery at Thornton-loch, which is adjacent to the sea-side, and were nearly all lying dead on the ground in the morning. Also, one night, a great crowd of starlings roosted in one of the shrubberies at Ayton, and were so numerous and heavy that they broke down the bushes on which they settled. The corn or common bunting was seen at East Barns. There were many lapwings in the fields, waiting for the clearance of the Lammermoor edges, on which they nestle. Larks and the greater titmouse were in song.

March 11. Water-hens returned to the inland pools. March 17, after two days snow, a great collection of lapwings and golden plovers appeared on the leas near the coast, having been driven from the upland country; but ducks were now scarce at sea. A thrush seen. Mar. 18th, first pied wagtail; missel thrush in song; redshanks, hitherto few, are now assembled in a considerable flock.

March 19th. Visited Woodhall in Innerwick parish. Its late proprietor had allowed this farm, and the adjoining woods, to be overstocked with rabbits, and the effects of this winter's deprivation of food, had driven them to attack the trees, and bark the thorn hedges to a degree and extent that I never before witnessed. Those acquainted with the place said there had not been such a severe storm experienced there for the previous 18 years. Rood after rood of the thorn and beech fences was gnawed bare; the broom and whins even were peeled several feet high, wherever they could be reached, and much of both was killed. Even bramble was eaten off by the snow-line, and the shoots peeled. Brier-bushes, wild gooseberries, black thorn, they also fed upon; shewing little discrimination; except that laburnum was untouched. Branches cut down in the woods in felling trees, were completely barked; and even the stumps of cut trees were bared to the timber. Afterwards I remarked that on the Halls farm many old oaks that had been cut, never had been allowed to spring, by the over-prevalence of these destructive rodents. Coppice oak in a scrubby state having been drifted full of snow was peeled, 3, 4, and even 5 feet high. Elms, ashes, oaks, ivy, birch, mountain-ash, hazel, holly, sycamore, and even firs were attacked, either by strips being peeled off, or having rings cut all round the stem. Where the snow had held down the points of the branches, the rabbits had climbed up to attack the upper parts of the trunks, which they could not otherwise have reached. A shepherd had come upon one rabbit that had got hanged in a sloe-bush, while thus feeding aloft. It lay across a dean, and the rabbit had ascended the stem by a buttress of snow, and had been stretching down with its head between a cleft, to reach some twigs anchored by the snow, when these becoming released by its efforts to browse on them, the animal was launched into space, with its head fixed between the forks, where it remained suspended at 9 feet high. I noticed several large oaks that had been climbed, by the aid of the snow, in order to be at the young twigs. Of trees killed by them, firs, hazels, and some young ashes were observed. A large ivy that had been killed overhung a rock, and the rabbits had probably obtained access to the stem over a snow bridge. Hollies were gnawed even at the people's doors to a certain height, the rabbits standing up on their hind legs to strip off the twigs. They even ventured on to the ice-covered ponds and peeled the willows, which were left a crop of white wands. They did not relish snowdrops, but ate the crocuses all over. Greens and green-beds in the gardens were cropt by them; leeks were cut level with the snow; and cabbage stalks peeled. Here many thrushes were singing in the evening, and lapwings and curlews had settled in the fields near their breeding places.

March 22nd. In the Pease dean, hips are still adhering to the branches uneaten; and many haws were afterwards observed in a variety of places. It is noticeable that fieldfares leave haws till they are reduced to extremities; and with regard to hips the redbreast obtains the greater share of them, and not the thrush kind. March 26. After bitterly cold weather, the baffled lapwings were driven to the ploughed fields and the coasts, and curlews regained the sea-shores. Wild ducks had left the rocky coast. Mar. 28. One grey linnet returned. The furzy dean here was once notable for the number of these linnets that bred in shelter of the bushes; but only three or four

birds were visible during the summer ; and it is doubtful if any bred. They were plentiful in the preceding autumn. The scarcity was noticed elsewhere. Flying for refuge to the South of England, immense numbers became victims to the bird-catchers. Six thrushes on a warm part of the sea-coast, where the sun's rays had melted the frozen soil, had associated to dig for worms, &c., as their congeners had done in the depth of winter. These were probably all the neighbourhood could supply, as they are quite thinned out, the migrants not having returned. Several lapwings were noticed to-day going off to the hills in a body ; others spread down to the sea-side on the coast-fields. On the 29th, which was fresh and sunny, they had disappeared, as well as the curlews and thrushes.

On April 1, wild ducks were again numerous at sea, but the golden-eyes (?) had left, except a single bird. No redshanks were seen, nor afterwards did they appear. April 2. No thrushes anywhere. Long-tailed field-mouse dead in the open field. Turned out the skeletons of two redwings that had crept into an aperture under a stone wall, and perished. Three pied wagtails present. April 4th, two grey wagtails arrived ; fourteen eider ducks seen in a flock at sea. April 5th, a wheatear arrived. April 7th, another grey wagtail ; four or five wheatears on the coast ; another party of six more to the north ; nine or ten wild geese passed. Sea very stormy. April 12, three thrushes seen ; a single wren visible. April 13th and 14th, snow fell ; on the 15th the coast fields were cleared of snow. A single gold-crested wren was seen among furze in Oldcambus dean. This was the only one visible for the season. The fir-tree tops were tenantless during the summer, so far as regarded this bird. One ring-ouzel appeared ; and several more wheat-ears. Ten eider ducks at sea, male and female equal in numbers. A very large flock of wild geese passed in the evening, the largest seen for many years. They haunted the fields at Penmanshiel and Howpark for three weeks, doing much damage to the grass.

April 16, I went to examine some miles of wood, on the banks above the Pease burn. Birds were almost absent, and only one thrush was heard. It appeared like a deserted part of creation, waiting to be re-peopled. One was reminded of an Irish record of the year 903, when there was such a mortality of beasts and birds, "*ut non audita fuerit vox merulæ aut turdi hoc anno.*" (*Annales Inisfalenses*). Some of the hedges were peeled with rabbits, and they had attacked the holly, ivy, sloe, wild brier, ash, mountain-ash, hazel, and elm, but not to any extent ; silver fir and larch branches cut down were peeled, as well as those of other trees. Only the remains of one dead bird noticed, a fieldfare, nor were there any by the foot-paths. They had avoided the woods, which were deeply covered on the ground with snow. A greater tit seen, but no other kind of titmouse. April 17th, a single blue ox-eye seen ; first humble bee appeared.

April 18th, examined the sea-banks between Redheugh and Dowlaw Moors. Dead fieldfares were scattered by the burn-sides, and among the beds of woodrush, and the willow-scrubs. They had resorted there at night, after passing the day on the turnip fields above, and had perished. A dead lark and grouse were observed. There were no wrens on the coast, this being a

favourite residence of these birds. More pied wagtails arrived. Sea-pigeons scarce. Meadow-pipit and reed-buntings on the moors.

April 21st. On the river Eye from Reston to Coveyheugh, birds were scarce. A single dead blackbird and fieldfare were noticed. Birds had been dealt more leniently with here. Two wrens were seen, and several redbreasts; the missel-thrush was building. The reed-bunting and the greater tit, single birds, were noted. Several blackbirds visible; a thrush heard in the evening. Dead wheat-ear on the moors. April 25th. On the sea-banks before rain, five bank martins and two of the common swallows seen. A flock of about thirty rock pipits, an unusual circumstance, this not being a migrant; but it had probably been to some extent this season; this convocation being the returning wanderers. April 27th. Swallow appeared in the valley of the Eye. April 28. Middle willow wren (*Sylvia Trochilus*) arrived near Renton House, and on the 29th near the coast.

May 1. Swallow seen, but not on the 2nd, 3rd, or 4th. Two whin-chats near Cockburnspath. May 2nd and 3rd, solan geese commenced passing up and down the Frith of Forth. May 3rd, a very large number of queen humble-bees (*Bombus terrestris*) have survived the winter, and frequent at present the willow catkins; this was observed by Mr Currie also, at Linthill. One day I counted about 100 on one willow. Three golden-eyes (?) remain at Siccar-bay.

May 5th. Good day. Visited Dunglass. Two martins on the coast; wheat-ears, new arrivals; pair of swallows in the valley of the Pease. Bank martins at Dunglass Mill. No thrushes at Bilsdean, which is in a well-sheltered seclusion, and even common sparrows were scarce there. There were some blackbirds at Dunglass among the shrubs, a single thrush and missel thrush, where one might have seen them in scores in ordinary years. The remains of two redwings and a fieldfare by the side of a walk. Pair of whin-chats on the fallow land. May 9th, very cold, no swallows. May 10th, two bank martins, and two wheat-ears appeared. May 11th, willow wren began to be widely diffused in hedges and woods; cuckoo seen. May 12. Four swallows at Pease Mill; whinchat seen; general tale is the want of thrushes to enliven the year. No wrens or tits in the Pease wood; two creepers seen. A blackcap warbler, and two of the wood wrens have arrived. First wasp visible, and first white butterfly (*Rape*). Rock-pipits pairing. May 13th, mild and fresh. Willow wrens well diffused, the three kinds of swallows seen; and four fresh wheat-ears. Grey and black slugs are particularly numerous, as well as shell snails; and the grubs of *Tipula oleracea* are as plentiful as if they had not felt the winter. May 15th, dotterels appeared on the moor edges. May 21st, martins and swallows began to increase in numbers; white-throat arrived.

May 22nd. This was a most remarkable day amongst the migrants; a rush had taken place, and a variety of species had appeared in company. The common willow wrens predominated. Trees, whin-bushes, sloe-brakes, hedgerows, and even the grass were lively with birds in search of food, and leaping up and down after flies. The willow wrens had very little song, and were greyer than the early arrivals; perhaps these late birds were mostly females. They were very hungry; and at evening were occupied like the

common wrens in prying into the hollows of stone walls for lurking spiders. At night they roosted in the whin-bushes. The next largest constituent of this swarm, was the grey flycatcher. There were three or four blackcap warblers also; several sedge-warblers in full song; some redstarts; one or two whitethroats; and a considerable contingent of wheat-ears. Martins had increased in numbers also at their sea-side residence. Two swifts were seen. May 23, most of yesterday's arrivals had left, there remaining a pair of flycatchers, a pair of wood wrens, not observed then, a few whitethroats, a sedge-warbler, as well as some of the wheat-ears. Swallows took up their residence. May 24th, grey slugs very numerous in the fields. May 26th, more flycatchers had arrived keeping in little bands of seven or eight. Another company of wheat-ears, of from eight to ten, in a very tame condition were also present. They had come with a south wind, the air having become quite mild.

On May 27th, the first swallow had got up to the Lammermoors at Boonsley above Woodhall, East Lothian. A shepherd here remarked to me: "There's something no richt wi' the birds the year—there's the lav'rocks—they're no singin'—they get up into the air as they used to do, but they've nae sang, naething ye may say but their winter chirp."

May 28th. Wheat-ears had mostly left. June 2. In a dean near Oldcambus, where the fieldfares had fallen so numerous, an ivy bush was quite loaded with full-grown berries; and I noticed the same circumstance at Houndwood house; not one of them had been touched by the birds. Slugs and snails were extremely numerous on clover leas, and almost everywhere. In gardens they ate up lettuces, and the flowers in greenhouses. The grubs of *Tipula oleracea* were very noxious to oats on several farms in the neighbourhood; and many were turned up by the turnip hoers. The frost had had no effect on them. A cold, moist, damp season appears to increase their vitality.

June 5, a late arrival of grey-wagtails, two females, and a male.

Now in the spring of 1880, thrushes, blackbirds, missels, wrens, redbreasts, tits of all kinds, gold-crests, grey linnets, and stone-chats have never recovered their old numbers, and several of them are extremely scarce. Yellow-hammers and hedge-sparrows are as plentiful as ever; and the same may be said of the house-sparrows; but there were fewer greenfinches and chaffinches during this last winter, and only a limited attendance accompanied the sower, to pick up the uncovered grain. It will probably be some time before the blank becomes refilled by migrants, or restocked by those that have remained attached to the locality. We have had no fieldfares or redwings during winter of 1879-80. A mere handful were noticed on Nov. 13th, but they never returned.

With regard to *vegetation*, so long as the snow covered the majority of plants, they were pretty safe; but the cold was so lengthened and extreme, that several perennials that I had planted in the borders during autumn, which had to depend only on the strength of their own vitality, never grew. On Feb. 1, whins had not been touched by frost, and were full of forming blooms. On the snow departing from the garden on Feb. 6, Penstemons and Antirrhinums were withered to the roots, and they nearly all perished in

subsequent black frosts. Garden and lemon thymes were both frost-bitten. Old plants of stocks and wall flowers were killed; *Nepeta grandiflora*, was cut to the ground. Feb. 26, *Fuchsia Riccartoni* commenced casting much of its bark. Here it attains in the open upwards of 6 feet in height, and is very hardy. The frost of Dec. 1879, however, has nearly killed one of the bushes. Many of the garden roses had to be cut over. On March 3, the winter aconite and snow-drops were in blossom, and some Christmas roses; catkins appeared on the hazel. On March 8th, at Lochend, near Dunbar, no injury had happened to shrubs. In the cottage gardens, wall-flowers and the Bass mallows were reduced to bare poles. At Dunglass the Portugal laurel was much blackened by frosts; at Dryburn bridge in the open it was in full flower. The turnip fields in East Lothian had been deprived of their entire foliage at the snow-line. At Cockburnspath the young cabbages in beds came safely out from beneath the snow, but while still flabby and moist, the frosts that followed the snows, penetrated them, and the heads came off entirely in a piece; the snow had only pressed them down. Greens and green-beds of the cottagers were annihilated. Of calceolarias in cold frames, there were few escapes. On March 25th and 26th the cold frosty winds were much felt; furze became sore withered, and some of the branches were killed. Snowdrops and winter aconites were flattened to the ground, and the flowers of the first withered; Alpine cress was nipped; flowers appeared to shrink together; ivy on walls was pinched; the Sweet Williams grew withered; crocus ready to blossom, kept its flowers closed; but they opened to the sun on the 29th, when the coltsfoot bloomed. April 2, blue Hepatica bloomed; and whins were in bloom.

April 21. Near Lemanton and Houndwood the furze was extremely flattened by the pressure of snow, and the twigs were more than usually browned. Very little damage had been done to shrubs in the policy at Houndwood. *Escallonia macrantha* was hurt, and a narrow-leaved species had its twigs pruned. Guelder rose had been much hurt in the twigs. Rhododendrons had escaped. Some budded roses had been destroyed, and other kinds had to be cut down. Cabbage plants and broccoli escaped. Garden thyme was much bitten. Near the public road where much exposed, hollies were singed, a cotoneaster was much shattered, and garden thyme was nearly destroyed. At Horsley, which stands high, several yews were nipped, *Mahonia aquifolia* was much blasted. Whins were sore tarnished, and curiously twisted and flattened by the snow. April 28th, at Renton House, some recently planted Rhododendrons were hurt, and *Arbor-vitæ* were killed; some of the Coniferae were browned.

May 2, reported from Coldingham, that border pansies kept fresh all the winter, till the cold thaws came, when they seemed to wither up. Many young double wallflowers and Antirrhinums planted in autumn, had at the above date, become mere skeletons without bark (a fate that befell the entire lot of my own). In the beds only small cabbage plants survived.

May 5. Furze was sore blasted on the sea banks at Bilsdean; *Mahonia aquifolia* was much scorched in the nursery. At Dunglass, lauristinus was much withered, and also the *Arbutus*, near exposed walks. Near the Mansion House, on the south side, a larger and smaller leaved variety of

myrtle, which had grown to a considerable height, had the foliage shrivelled up. In the winter of 1879-80, these have been still more damaged. *Escalonia macrantha* was sore cut down. Roses had been cut to the ground. A *Garrya elliptica* had its bark peeled off; the Mahonias were much injured. Pampas grass, well sheltered, had the tops of the leaves converted into a withered wisp. Araucaria was in good condition, but was greatly browned, 1879-80.

May 27, at Crowhill, Innerwick, the winter has cut down common laurels, Mahonia, laurustinus, and a trained yew. Thyme, as a border plant, stood the winter unaffected at Innerwick Railway Station.

June 6th, at Chirnside and vicinage, *Garrya elliptica*, at the station, was stripped of its leaves and bark, but, being pruned, it was again springing at the base and on the branches. Whins were very much killed near Blackadder Mains. Mr Boyd remarked that with him, at Ormiston, some of the tender foreign kinds of ivy had been much cut down, and great quantities of shrubs. Dr Stuart's conclusion was that where things were dry the least damage occurred, but damp and re-freezing did the mischief. At the Paper Mill, *Prunus lauro-cerasus* was much hurt, laurustinus blasted. Ivy was much injured at Allanbank. At the Pistol Plantings and Allanbank the hawthorn hedges were considerably peeled by rabbits.

June 19th, in the manse garden, at Oldhamstocks, a very flourishing Australian blue gum tree (*Eucalyptus*) had perished. Much damage had been occasioned in the shrubbery, particularly to trees and shrubs planted in the preceding autumn; many young Scotch pines were killed; common laurel was much withered; a double cherry was half killed; *Fuchsia Riccartoni* was killed to the ground, as had also happened to it elsewhere in the village; several *Thuja orientalis* and yew were killed; butcher's broom was much hurt; Portugal laurel was killed to the ground; hollies had stood well uninjured.

Chirnside and its Vicinity. By Dr CHARLES STUART.

Writing 6th March, 1879, Dr Stuart says:—

The winter has been unprecedentedly severe and protracted. Your idea of comparing the vitality of plants in the garden, which have withstood the severity of the season, is good. The green vegetables have suffered severely, when not covered with snow. The cabbages of any size became like soap, and the broccolis not much better. Brussels sprouts and Savoys have held out bravely, and furnished the only dishes of greens for the table obtainable. The winter spinach, being well covered, is quite safe; and comes in hand by and bye. On my rock garden, last year at this time, I had the Himalayan primrose (*Primula denticulata*), in beautiful flower, with eleven spikes in bloom open at once. I see the plants are throwing up their flower stems vigorously, and are quite safe, but cannot flower till the end of the month, or April. A large-leaved blue *Hepatica*, perhaps *angulosa*? is the only flower on the rock-work out; it is a very pretty blue, quite different from the

ordinary forms of that plant. *Cyclamen Hæderifolia*, a true British plant, is also quite fresh. *Sisyrinchium anceps* and *Bermudianum*, two early liliaceous plants, are shooting up their grass-like foliage. A fine patch of *Saxifraga hirculus*, which I was very anxious about, is beginning to show signs of life; and *Primula Scotica* has stood out bravely. This is quite a gem, to my mind the most interesting of British plants next to *Linnaea borealis*. The *Azalea procumbens* from Cairngorm and Braeriach is untouched by frost, and all the Scotch Alpines seem safe.

In the flower garden, roses, especially standards, have suffered severely. I have a small collection of tea-roses in a spare roof-frame without heat, which have withstood the cold well, the frame being during the worst of the weather buried in snow. There are actually flower-buds on some of them, and others are sending out new growth. Penstemons are killed.

As regards birds: I noticed the rooks at Ninewells, on the 28th February, building their nests, carrying sticks, and making a great noise, preparing for the coming breeding season. I have seen considerable companies (one containing 22) of the long-tailed titmouse, a bird, that though plentiful here at one time, I have failed to observe for some years. I saw one family at the Pistol Plantings, Blackadder; another in the parish at Harelaw. They are a very singular bird. Although very shy, I got within ten yards of some of them. The keeper at Edington has observed the goosander on the Whitadder this winter; and I have noticed flocks of golden plovers since the fresh began. Grey plovers, with the common pewit, were seen by the Edington keeper. The blackbirds and thrushes have got a great thinning; I fed them regularly every morning after breakfast when the snow was on the ground. I have not observed them since the fresh, but on Sunday night, when visiting at Chirnside Station—I heard the mavis in full song distinctly. The red-wings and field-fares left this district when the snow began, and have not been seen since.

16th March. Owing to the protracted snow storm, wild animals were driven to great straits for food, especially hares and rabbits. At one period of the storm, the turnips were deeply covered with snow and not to be got at. At this time these animals attacked the bark of the thorns, and especially the crab-apples in the hedges, laying them bare ever so high up the stems, which it will take years to recover from the damage done. I have often before in severe seasons observed the barking of the hedges, but never to the same extent as has been done during the late storm, whole lines of hedges being greatly damaged. I was also struck with the preference shown to crab-apple bark; next the thorn; and strange to relate, the laburnum was extensively barked, as well as the common holly, both very bitter, if not poisonous. The seeds of the laburnum are undoubtedly poisonous—but I cannot be sure of the bark. The Scotch firs were also extensively barked—where branches had been blown off, or young tender trees accessible. The rabbits became *skin* and *bone*, and were an easy prey to dogs and other enemies. The wood-pigeons came into the gardens in the middle of the village here, and in front of the windows ate the broccolis, Brussels sprouts, and other greens they could get near. In some gardens where the hares could get in, especially at Fishwick Mains, they barked the wall trees so as completely to ruin them for ever.

7th April. When driving to-day between the Pistol Plantings and Cross-rig, in the Parish of Hutton, I saw a cuckoo, which had evidently just arrived. It took short flights, alighting again and again on the hedge bank alongside the road. I was within two yards of it on several occasions; and it seemed tired, and unwilling to rise. It could hardly have come in a more dreary day; for a more soaking persistent day of rain we have not seen for some time.

May 3rd. The swallows, sand and house martins appeared at Allanton Bridge in flocks, on the 25th April, nine days later than last year. None have been seen since that day. The *Sylvia trochilus*, I observed at Hutton Bridge on the 28th in full song. Mr Evans from Scremerston visited me on the 21st April. He came to inspect the heronry at Pistol Planting. He found 50 nests in a colony, full of young birds; the old ones carrying large-sized fish to them for food—the young emitting a peculiar grunting cry of satisfaction. He watched their operations for three hours. The cold weather does not seem to have affected the nesting of the hardy birds. He got the young of the tawny owl, and young dippers in Cheviot, a few days before he was here. He was close to the peregrine nest in the Henshole. End of May. The sand-martins appeared on the 16th April at Whitadder Bridge, Allanton. The cuckoo was heard on 1st May at Swinton House woods. The swifts were first seen on 5th May; the redstart on 2nd May; and the corn-crake on the 20th May.

May 3, the frost has fatally damaged *Araucarias* and *Wellingtonias* in many places. *Garrya elliptica* and *Berberis Darwinii* are in instances killed, never having been previously tried by a severe season. Laurels, Portugal laurels, and the common whins are killed to their roots in many places.

At Broadmeadows. Hutton, where there is the finest collection of roses in the county, all the plants budded on the dog-rose—short and tall standards—are killed. Those budded low on the *Manettii* stock are safe. I was there yesterday, and Mr Macbraire showed me the damage. He has lost 300 plants of rare quality. At one time he thought there would be 600 killed.

At Ninewells the frost was very severe, and the same may be stated of the roses there, as at Broadmeadows; also the evergreens. I lost few roses, mine being dwarfs on the *Manettii*. You are right about the scarcity of small birds that are insect and grub feeders.

July 2, when at Fishwick Mains, on Monday, my second son and I observed the blasted condition of several oak trees, not a single green leaf, nor appearance of any. We came to the conclusion that the frost of last winter could alone have been the cause. The laurels and evergreens generally at Ninewells are completely killed to the ground. The *Mahonias* seem to have escaped, but *Berberis Darwinii* is completely killed where it grew as a shrub. On the wall it is all right. It is a pretty shrub. *Garrya elliptica*, which has stood the winter for twenty years, is quite killed, but sprouting from the root. *Fuchsia Riccartoni*, which has stood the winter for twenty years, is killed to the ground, but is coming from the root. I also notice the common privet very much blighted, the leaves coming in a blighted form.

Ayton Castle Gardens, 2nd July, 1879.

Mr BOWHILL supplied the following report, furnished by the Gardener at Ayton Castle :—

Whins killed to the ground. *Portugal* and *Common Bay Laurel*, a good many injured ; but none killed outright. *Broccoli*, only 60 plants saved out of 500 ; greens nearly all killed. *Peas* sown on 29th November, 1878, quite uninjured and blooming beautiful. *Birds* and *Slugs* seen as plentiful as ever ; I think I never saw more slugs than I have this season. *Caterpillars* more abundant than ever on gooseberries. Frost severest on the morning of 14th December, 1878—29°. Average temperature all winter never exceeded 35°.

Kimmerghame and Dunse.

Mr CAMPBELL SWINTON writes, April 3, 1879 :—

My gardener assures me—and my own observations confirm his report—that our plants and shrubs have suffered much less from the very severe winter than was to be expected. Our chief enemies have been rabbits, who have attacked many plants, which I never knew them injure before. The laurels are much browned on the younger shoots, but a little pruning will restore them to excellent condition. The only trees which I can mention as having been killed—or nearly so, are an *Araucaria*, which has all its ends bitten hopelessly ; and a variegated *Wellingtonia*, which looks very bad ; but was unfortunately planted in a position unusually exposed to frost.

Mr JOHN FERGUSON writes from Dunse, May 2, 1879 :—

In the few walks I now take, I seldom see a thrush, and several observers have remarked to me that they seem almost extinct.

The newspapers recorded a great slaughter of blackbirds, &c., during the storm, by some of the people in the vicinity of Dunse, for the purpose of selling the dead birds, I suppose, in London. A cockney appears to eat everything that has feathers on it ; but there is no need for Scotch people supplying this craving to the disregard of the dictates of mercy.

Report on the damage done to Trees, Shrubs and Plants at Paxton House, in the Parish of Hutton, Berwickshire, by the severe frost in the months of December, 1878, and January, 1879. By GEORGE MUIRHEAD.

The winter of 1878-79 will be long remembered in the neighbourhood of Paxton, as one of the most severe and protracted which has been experienced during the present century, for the oldest people in the village say that they do not recollect of a winter of such extraordinary severity, or of the snow lying so long upon the ground without a thaw. For nearly nine successive weeks in December, January, and February, snow lay deep all over the

ground, and the ponds and brooks were frozen. During that time, also, the Tweed was three times frozen over from bank to bank opposite Paxton House, so that men could walk across the river on the ice. The hardest frost occurred on the night of the 13th and early morning of the 14th December, when the thermometer at the height of four feet from the ground, and fully exposed to the open air, marked no less than 40 degrees of frost, or 8 degrees below zero.

At 10 o'clock at night on the 13th December, the thermometer fell to 5° below zero, and at 9 o'clock on the following morning the indicator of the thermometer showed that the temperature had fallen other three degrees during the night, for it stood at 8° below zero.

At the Meteorological Society's Station, in the garden at Paxton House, the thermometer did not fall lower than 2° below zero on the night mentioned. It is not placed in the open air, but in a covered wooden box with louver boards at the sides.

During the month of December last, 203 degrees of frost were registered at Paxton garden; in January, 155; in February, 63 deg.; in March, 25; in April, 14; and in the first week of May, 7°.

The damage done to the trees and shrubs by the severity of the frost has been very great.

Fine specimens of the Conifers, such as *Cedrus deodara* and *Cedrus Libani*, 5 and 6 feet high, have been killed, as well as *Taxodium sempervirens*, *Cryptomeria elegans*, and *Japonica*, in some cases. *Cupressus elegans*, *Pinus nobilis*, *Pinus cembra* and *Pinus pinea*, *Andromeda procera*, and *Salisburia adiantifolia* have also been destroyed; and *Wellingtonia gigantea*, and *Thuja gigantea* have been injured.

Evergreen shrubs have suffered severely. Great Bays and Portugal Laurels, 10 and 12 feet high, and 20 feet thick, have been killed to the ground; as well as common ivy on walls and trees, *Lauristinus*, *Aucuba Japonica*, *Cytisus*, *Cotoneaster*, *Garrya elliptica*, white Jasmine on walls, common Privet, double flowering and common whins, *Daphne Laureola* in many instances, and some *Cotoneaster microphylla* on walls.

Common rhododendrons in some cases have been injured on the points of the shoots, and a good many hybrid kinds killed to the ground.

Even the common hollies and yews have not escaped—the points of the shoots being browned.

The gardener at Paxton House has remarked that the bays and yews under the shade of large trees, especially beeches, seem to have suffered more severely than when fully exposed.

The whole of the standard H.P. roses have been killed, but the dwarf H.P.'s have not suffered much. Tea roses on walls have been all killed to the ground, although in many instances well protected with spruce fir branches.

Peach trees on walls have been injured, in some cases, as much as 2 feet, from points of shoots being destroyed.

The flower buds of apricots have been much hurt.

Vegetables have sustained great damage—Broccoli especially, for none of it has been left alive. Savoy, parsley, lettuce, and Brussels sprouts have

been injured. Fruit trees, flowers, and vegetables are about a month or six weeks behind their usual this year.

In a subsequent note, of 8th July, 1879, Mr Muirhead remarks:—"I notice the oaks here are affected the same way as at Ormiston House (Mr William Boyd's); a great number of their smaller branches being killed, and the ground below them being littered with dead twigs."

Ladykirk House. By Mr ALEXANDER SCOTT.

The late winter has been the most severe we have had since 1860, the frost then being 36, and last December 35 degrees. During the winter there were often from 20 to 30 degrees. Owing to the severe frost and the long continued snow, vegetables and many kinds of shrubs have been badly hurt. *Cedrus deodara*, *Araucaria imbricata*, *Wellingtonia gigantea*, common and Portugal laurels, lauristinus, ivy, clematis, *Euonymus variegata*, hollies of variegated sorts have all been less or more hurt; and about 50 per cent. of tea, hybrid perpetual, China, noisette roses have been entirely destroyed. Spring and winter vegetables are nearly all destroyed. Broccoli, Brussels sprouts, cabbages, savoys, and greens have been most hurt. Some of the late sorts of apples are very much hurt, both the blossom-buds and spurs, are destroyed. Since the end of November there have not been two weeks free of frost; and lately it has been severe for the season of the year, causing seeds to germinate badly, and it will cause a bad succession of garden crops. Blackbirds, thrushes, linnets, squirrels, and the brown-backed garden mouse have been reduced in numbers very much. Not a third remains of their usual number. Slugs also are not nearly so plentiful as they are in most seasons.

Ladykirk, 11th May, 1879.

Notes as to the Effects of the late Winter, 1878-9, at The Hirsel, Coldstream, the seat of the Earl of Home. By Mr JOHN CAIRNS, Hirsel.

The grounds and gardens at The Hirsel are comparatively low-lying, and are bounded on the south-west by a lake of considerable extent. The Leet runs through the grounds from N.W. to S.E. I am not quite sure as to the height above sea level, but should suppose about 50 to 60 feet.

As being of first moment to the subject at issue, I give the lowest temperature, and number of days in each month in which the thermometer was below the freezing points:—

MONTH.	DATE.	LOWEST TEMPERATURE.	DAYS BELOW FREEZING POINT.
November ..	29th ..	9° of frost	22
December ..	14th ..	2° below zero	30
January ..	24th ..	29° of frost	30
February 22, 24, 25, and 26		11° „	20
March ..	20th ..	17° „	20
April ..	19th ..	9° „	14
May ..	1st ..	9° „	6

We have not many Coniferæ here, but such as we had have stood the winter very well; roses have suffered very much, *Standards* of the hybrid perpetual family, from their being more exposed suffered most, so much so that we may say none were left. No doubt a few struggled through, but their vitality was of short duration. The dwarfs of the same type suffered less, from their being easily protected; but even of these about half died. Tea roses were cut down to the ground, but where on their own roots are now coming away quite strong. We had a large plant of *Maréchal Niel* entirely killed, though it had the protection of a wall, while the well-known *Gloire de Dijon*, in good situations, came through unskathed.

China roses, even on walls with southerly aspects, were cut down. On the same wall the sweet bay, *Laurus nobilis*, *Berberis Darwinii*, and *Buddlea globosa*, shared the same fate. Lavender was killed outright, as also Globe Artichokes; the *Gynerium argenteum* (Pampas grass) has suffered much, though well protected; the plants may come round yet. Another grass, the *Arundo conspicua*, seems hardier, having fared better than the above. *Tritomas* of sorts are almost killed out, though they stand our ordinary winter without hurt.

Of shrubby plants the common Bay Laurel suffered most, the young immatured shoots in many cases being quite killed, though the general vitality of the plant will not be permanently injured. The Portugal Laurel has suffered, if anything, very little; and as interesting and suggestive, shewing how situation more than distance above the sea has much to do with plant life, at Lees, the seat of Sir John Marjoribanks, the Portugal Laurel is very much hurt. The same applies with stronger force to the Bay Laurel—one can almost account for this owing to the lowness of the situation, being only a few feet above the level of the Tweed. The Lees from here is not over a mile as the crow flies; but as at variance with the above theory, at Newton Don (Mr Balfour's), 8 or 9 miles from this, and almost due west, and much higher above the level of the sea than here, the Laurels are much hurt by frost; so much so that many have had to be cut down. Such facts are noteworthy, and deserve the attention of those whose business it is to solve such seeming contradictions.

Some of the rhododendrons have been injured by the frost; they are of the more tender kinds, evidently hybrids, having either parent from a warmer clime. Clematis on the open has in some cases been killed. Aucubas have had their foliage hurt; but the plants not permanently injured.

June 12, 1879.

Rosy-bank, Coldstream. By WILLIAM CUNNINGHAM, Esq.

I have, in my place, sustained a certain amount of damage. The *Jasminum* (white and yellow) which covered a considerable part of the front and east end of the house has suffered materially, and also a large *Wistaria* and other shrubs in front of the house; while a climbing Clematis, a *Gloire de Dijon*, and a *Wellingtonia* in and about the same situation, have retained their vitality. In the garden *Spiræa bella*, Laurel, Rhododendrons, Ayrshire climbing Roses, large White Broom, Privets, large Lavender Bushes,

Carnations, &c., have all been greatly injured. Other shrubs in the garden, however, such as Weigelia, Yews, &c., have weathered the storm, and present a healthy appearance.

The feathered tribe also suffered severely. I, from time to time, came upon a blackbird that had succumbed to the storm. I have still, however, several survivors, but there is scarcely a thrush left. There is one, however, at present hatching in an ivy bush, whose progeny, I hope, may be spared to enliven us.

Marchmont. By Mr PETER LONEY.

Writing May 7th, 1879, Mr Loney says:—

We have no swallows, thrushes, wrens, tits, or grey linnets yet. In fact I never saw fewer birds at this day of the month and year. Then as to vegetation it is very far back, the larch is looking a little green, thorns are budding, horse-chestnuts and oak and ash are barren as winter. Elm in several instances in bloom, but generally speaking our woodlands have a very wintry aspect. Grass has made but little growth, and where stocked is very bare—it is a serious job on stock; ewes and lambs are suffering severely from inflammation, I believe caused as much by frost on the grass, as with the scarcity of bite. In some instances hogs are going down from the same cause. The effects of the late winter with me have not been so disastrous as with many. Our shrubs have stood well; I have lost a few roses, but not more than usual.

Note of the Lowest Temperatures and the effects on Vegetation, at Thirlestane Castle Garden, during the winter 1878-79. By Mr JAMES WHITTON.

Thirlestane Castle Garden is 558 feet above sea level, and is situated in the middle of an oblong valley, with hills enclosing it on the North-East, West, and South-West, which rise to the height of about 1,000 feet.

The lowest temperatures registered during the past winter are as follows:—

THERMOMETERS				
	IN AIR AND		BLACK BULB	
	PROTECTED.		ON GRASS.	
1878.—Dec. 14	..	1°	..	0.3°
„ 15	..	2	..	0
„ 20	..	2	..	0.1
1879.—Jan. 20	..	7	..	1
„ 21	..	8	..	5
„ 23	..	8	..	1
„ 24	..	5	..	0
„ 27	..	5	..	1
Feb. 20	..	8	..	4
Mar. 14	..	7	..	0.4

The following plants were all killed unless where well covered with snow : Hybrid Perpetual and other fine Roses—*Menziesia polifolia*, *Pernettya mucronata*, *Arundo conspicua*, *Tritomas* and *Globe Artichokes* ; also all the Brassica family.

Those growing on walls which shared the same fate were *Escallonia macrantha*, Tea Roses (except Gloire de Dijon), the white and light flowered Clematisses ; while the dark varieties were not in the least injured, and *Jasminum nudiflorum* growing by their side was but slightly checked in its flowering by the severe frost of 14th of March. None of the wood of our fruit trees was in the least injured ; even Peach trees in pots plunged in the open border did not suffer in the least.

In the pleasure grounds some of the Common and Portugal Laurels have suffered very much, especially those growing in the shade of trees, a good few of which are killed. Some of our common Yews are also pretty sorely injured ; while *Wellingtonia*, *Cedrus Deodara*, and some of the Barberries are slightly hurt.

The following have received no injury whatever :—*Rhododendrons*, Box, all the Thujas, *Thuopsis borealis*, and *dolabrata*, var., *Cupressus Lawsoniana*, and *Picea amabilis*, *nobilis*, *grandis*, *magnifica*, *Nordmanniana*, *lasiocarpa*, *orientale*, *Douglasi*, &c.

I do not know of anything more to add, unless to state that judging from present appearances our fruit crop on walls appears to be all but a complete failure, though I don't know what share the past winter may have in it, as the blossom was plentiful and good to appearance.

21st June, 1879.

Harry-burn, Lauder. By ROBERT ROMANES, Esq.

My own garden and grounds lie in the immediate neighbourhood of Thirlestane Castle gardens. I fancy they are close upon 575 feet above sea level. A stream called "Harryburn" flows between the garden and the house ; and we are about 700 yards west from the "Leader" water. The garden is well sheltered, and has a southern exposure ; but we suffer much more severely from frost than places which are much higher, and have a colder appearance, and this I suppose is owing to our stream. The consequence, however, is that we do not attempt to grow delicate plants ; and have, therefore, comparatively little harm to lament in a severe winter.

My gardener says that the last winter has been more injurious than any since 1860 ; that the whole of our evergreens have suffered to some extent ; namely Yews, common and Irish Bays, Laurels, and Ivies ; almost every leaf has fallen from the large plain leafed Ivy—while the smaller leafed Ivies, and those more serrated have suffered less. Some of the finer Roses, such as tea scented, have been killed ; and the wood of 1878, of the commoner kinds, has gone—and none of the buds put in last year have started. The blooms of the finer varieties of *Rhododendrons* have been destroyed. The *Arbor-Vitæ* are the plants that have withstood the severity of the winter best.

EAST LOTHIAN.

Tynninghame House Gardens. By Mr R. P. BROTHERSTON.

I think the extent of damage caused by frost during the late winter is now fully patent. Of vegetables, Globe Artichokes were badly damaged, old Cabbages entirely destroyed, most of the Broccoli the same, Endive killed, Brussels Sprouts rendered worthless, Parsley just now is beginning to come away again; Spinach and Beet are much damaged, also Leeks, Onions, Scotch Kale, Spinach, and young Cabbages, Cauliflowers, and Lettuces; Lamb's Lettuce and Turnips were not damaged to any appreciable extent. Celery was somewhat the worse for the snow which caused a deal of rottenness after the thaw set in. Many Roses were damaged to the surface of the soil. The dark foliaged variety of *Ajuga reptans*, and the variegated *Dactylis glomerata* were very badly cut up; Dahlias and *Salvia patens* left in the ground were entirely killed. *Agapanthus umbellatus* and *Tritomas* were completely cut down, but will spring again; *Fuchsia Riccartoni* was cut down, and *Lonicera flexuosa* was killed. In the hundreds of other flowers grown there is no damage apparent, but there is a singular lateness in blooming and starting into growth. Shrubs which have suffered are *Benthamia fragifera* and *Escallonia macrantha* only; on a wall where Tea Roses were badly handled the only shrub damaged was a *Ceanothus*. *Escallonia sanguinea*, *Desfontainea spinosa*, *Azara microphylla*, *Clematises*, &c., were not damaged at all. *Garrya elliptica* is in full flower at present.

Whin is killed to the ground in some positions. The rabbits have caused a vast amount of permanent loss through barking trees, shrubs, and hedges, killing and disfiguring to a large extent.

All kinds of birds are very scarce. In former years the daily concerts they got up were quite deafening, but this year it is almost possible to discern the individual songsters.

It may be of interest perhaps to let you know the state of the fruit crops, in prospective, of course. The Plum show is very sparse, so are Apricots, though quite a sufficient number for a good crop are setting. Some Pear trees are well budded, others but very sparsely so. Apples in general look extremely well. Cherries and all small fruits are showing exceedingly well. There has been a fine show of spring flowers, but most extraordinarily late, and as a matter of course their display has not been so long continued.

May 3rd, 1879.

NORTHUMBERLAND.

Berwick. By Mr GEORGE BOLAM.

The following extracts are derived from various communications of Mr Bolam. They suffice to furnish a general idea of the state of matters in the neighbourhood of Berwick. Other particulars with regard to bird life on that coast, may be found in the "Proceedings" of the Club for 1878-9. On March 27th, 1879, Mr Bolam remarks:—

"In Berwick, though some people have lost a few roses, &c., I do not think the frost has done so much harm to vegetation as in the country, the sea air having probably a good effect." Feb. 27th. "Yesterday and to-day the blackbirds and thrushes have been singing in the garden, so also have the larks in the fields; it is quite spring-like. There are still a few thrushes, redwings, and fieldfares left, but their numbers have been sadly diminished by the storm." March 8th. "Yesterday there were 15 eider ducks off shore here, as well as several flocks of mallards and scaup ducks; also a few solan geese." April 28th. "I got a ring dotterel's nest last week. The redshanks were in considerable force along at Goswick, but I did not succeed in finding a nest. Blackbirds and thrushes, and in fact all our small birds are very much diminished in numbers this year, and in the fir plantations, where last year every good place held a nest, they are this year comparatively scarce, and the thrush's song is very seldom heard. The swallow was seen here on the 25th inst., very late."

Tweed Villa, Norham. By Miss DICKINSON.

8 large Lauristinus all killed to the ground; 17 Laurels (15 killed to the ground, 2 not quite so bad); 5 Aucuba Japonicas all much injured; 1 Gum Cistus killed; 7 large Hollies (2 killed quite to the roots, 3 much injured); 8 small Hollies unhurt; 7 large Portugal Laurels all much blighted; about one half the Roses killed to the ground, or very much hurt; 1 Ayrshire Rose dead, the Roses sheltered from the north-west least hurt; 4 large Lavender Bushes (2 killed, the others broken a little by the weight of the snow). 1 Plum (standard) killed. 1 young Pear killed. A pink Fuchsia nearly killed; all the red ones as usual, only later. The Deutzia and Weigelia, all unusually good. The other shrubs much as usual.

Rose Bank Villa.

Much the same as the others, except 1 large Deodar killed, and 2 injured.

Pallinsburn. By EDWARD WILLOBY, Jun., Esq.

In answer to your enquiries regarding the destruction caused by last winter's frost, to Shrubs, &c., at Pallinsburn, I find that Bays, Hollies, and Portugal Laurels have suffered extremely, especially those upon cold wet soil.

Trees of the Cedar class have stood the winter remarkably well.

Great destruction has also been caused to small birds—in fact thrushes and blackbirds are rarely to be met with.

Ford Castle. By Mr HENRY TROTTER.

I am sorry that I only kept a register of the frost for ten days, during the severest of the winter. I never found anything like the morning of the 14th December in my life; at Millfield the thermometer was 7° below zero; at Paston it was 6° below zero. The winter has cut down mostly all the common Laurels, while the Portugal Laurel has suffered very little. We have lost a great many Standard Roses; the dwarfs have not suffered much,

I have enclosed an account of the frost that I kept :—

1878.—Dec, 13.—29	degrees of frost at 4.30 P.M.
„ 14.—41	ditto. at 7 A.M.
„ 15.— 6	ditto. at 7 A.M.
„ 16.— 7	ditto. at 7 A.M.
„ 17.—21½	ditto. at 7 A.M.
„ 18.— 5	ditto. at 7 A.M.
„ 19.— 4	ditto. at 7 A.M.
„ 20.—26	ditto. at 7 A.M.
„ 21.—23	ditto. at 7.30 A.M.
„ 22.— 8	ditto. at 7 A.M.
„ 23.—12	ditto. at 7 A.M.
„ 24.—15	ditto. at 7 A.M.

Chillingham Castle Gardens. By Mr ROBERT BOWIE.

I regret that I am unable to give you an authentic account of the weather here during the winter, not being in the habit of keeping a regular register. I may, however, say that we have had nothing to equal it in severity since 1855; at that time we had 5° more frost on one occasion than at any time during the winter just past. The lowest degree at which I saw the thermometer this season, was at mid-day on December 14th; then it was 8° below zero, on an open part of the garden and on the north side of a post, 3 feet from the ground. The long continuance of a low temperature was, in my opinion, the cause of the injury done to trees, &c., being greater than usual. No doubt the snow we had at the time of the severest frost was a considerable protection to what was completely covered. I however find that things of a large size are killed quite to the ground, where their tops were above the snow, more particularly in low lying situations; the same kinds of trees and shrubs in the park, where exposed to the wind from all quarters, have not sustained any injury whatever.

May 23rd, 1879.

Writing July 3rd, Mr Bowie says :—

I notice that shrubs and trees of an evergreen habit have generally sustained most injury; more particularly in low and damp situations, and that the same varieties out in the open and higher parts of the park are not materially hurt, at least nothing like so much as they appeared to be three weeks or a month ago; many oaks of large size were, only a fortnight ago, more like dying than not; now, however, I am pleased to say it is an exception to see any that are not in (almost) full leaf; and although I have for more than 50 years been pretty well informed in much, very closely connected with Chillingham Park, I have no recollection of having seen it look so well as it does at the present time; no doubt there are some sad blanks, more especially in and about the Castle, but in time, I hope that from what has been done by way of replacing what had been rendered an eye-sore from the effect of frost, there may not be great reason for regret.

I was over at Fowberry Tower a few days ago; it is only some three or

four miles north from here; the death-rate there amongst trees has been much greater than with us. Several oaks I noticed, which must have been planted early in the last century, all but killed.

List of a few trees and shrubs that have been killed or injured here by frost during the past winter:—Killed to the ground—Hollies of different sorts; Laurels, common and Portugal; Rhododendrons (hybrids); Roses; much injured, but are, I think, recovering—Yews, common; Ivy, various sorts; Conifers of various kinds are much hurt, some all but dead.

Mr Gregson of Lowlynn, of date June 18th, 1879, when transmitting the two last notices, which he favoured me in obtaining, remarks:—

“The 14th of December seems generally to have been the most severe night. Here we had 23 degrees of frost, and that was our lowest; 24 at Haggerston; 8 “below zero” at Chillingham and Milfield; and 6 at Paston. I was at Ford the other day, and walked through the pleasure grounds, and there I saw all the shrubs below the Castle, cut to the ground. I noticed a *Pinus excelsa* almost killed! I have never known that Pine cut or injured before. The Ivy too on the Castle walls is very much injured, and much of it will not recover. Here we have not suffered at all, and I may say the same of Haggerston.”

Coupland Castle. By MATTHEW T. CULLEY, Esq.

I am glad to give such information as I can to your letter of enquiry, as to the effects of our late winter. Unfortunately, I cannot, at the moment, give you our height above the sea-level, nor can I give you the exact temperature of last winter, as I have not a registering thermometer; however, I can tell you that on the morning of December 14th last, the thermometer stood at 20 degrees in the entrance-hall, with all doors and windows shut. We are near a river, but high above it, and the river is streamy and the soil light, warm, and gravelly, so we are not troubled with those nocturnal mists that are so destructive to vegetation in frost. Nevertheless, we did not altogether escape, though mercifully dealt with in comparison of our neighbours. Hollies suffered, but were not destroyed; common Laurels were cut to the ground, as also Bays and Lauristinuses, but Portugal Laurels suffered comparatively little. Ivy on trees was nearly destroyed; the ivy with which the front of my house is covered, seemed dead for long, but has revived, and is growing vigorously, only a few shoots being actually killed. A great many rose bushes are cut to the ground. No forest trees have suffered but the oaks, and in a few cases—one before my window notably—the young twigs of these of the last two or three years' growth are quite withered, and have snapped off like tinder at the joints. I did not notice this till my cousin, George Culley of Fowberry, pointed it out to me; he has suffered terribly in this way, but Fowberry lies low on the banks of a sluggish river. Most of my oaks have escaped.

Gorse (whins) are nearly destroyed, and so is much broom.

Peas and potatoes are so much delayed that I did not get a dish of the former till July 11th, and the latter till July 7th.

July 16th, 1879.

Fowberry Tower. By GEORGE CULLEY, Esq.

Winter of 1879; Effect of frost on some of the trees and shrubs at Fowberry, on the river Till:—

TREES, DECIDUOUS.—Apples lost young wood. Oaks lost young wood, and look very miserable now at the end of July, with, in some cases, only a few tufts of leaves on stems and limbs. Some have apparently lost two years' wood, and there is a great difference between common oaks standing side by side. The same thing happened after the winter of 1860. Other ordinary deciduous trees, except Wych Elms, are in as good foliage as I ever saw them. In 1860 many Ashes, Limes, and Wych Elms were so split that you could put your arm into them, but nothing of that kind took place during last winter.

CONIFERS.—*Cedrus Atlantica*, three specimens transplanted in 1860, killed. *Cedrus Deodara* all killed, including two which survived 1860. *Cedrus Libani*, the only specimen I had, a tree of about 50 years of age, was killed in 1860. I lost all my *Araucarias* in 1860; I did not replace them. *Cupressus Lawsoniana*, several fine specimens damaged in patches; one large one near the river, I think, killed; two good plants at Chatton Vicarage killed. No plant has altogether escaped.

TAXUS.—Common Yews terribly damaged; I am afraid they will have to be cut down to snow-marks in many cases. As far as I remember the Yews were not hurt in 1860, and some of the plants now apparently killed are 70 or 80 years old. Nothing has surprised me so much as the damage to the English Yews. Irish Yews all damaged.

Thuja aurea killed. *Thuja gigantea*, two near the river apparently killed, others all damaged. *Wellingtonias* all badly damaged, and very unsightly.

EVERGREENS.—Laurels—Bay and Portugal both killed down to snow-marks. Hollies nearly all killed down to snow-mark; the only Holly unhurt is a *smooth-leaved* specimen, which also stood unhurt through 1860. As to Laurels and Hollies, the state of things is very like 1860, when plants, which must have been then 50 years old, were killed down to snow-marks. Ivy, all sorts damaged, some killed; about the same thing happened in 1860, when the Ivy covering the west end of the house was altogether destroyed.

Box.—Several sorts badly damaged. Privet.—Many plants killed.

Aucuba Japonica slightly damaged; was killed to snow-mark in 1860.

Rhododendrons.—*Ponticum*, several plants killed, others damaged; *Catawbiense* and some other Rhododendrons unhurt, but flowered badly.

Some of the better Conifers, which are unhurt:—*Abies Albertiana*, *Abies Canadensis*, *Abies Douglassi*, *Abies Menziesi*, *Abies orientalis*, *Biota orientalis*, *Cupressus Nootkaensis*, *Cupressus Lobbi*, *Picea grandis*, *Picea lasiocarpa*, *Picea Lowi*, *Picea nobilis*, *Picea Nordmanniana*, *Pinus Austriaca*, *Pinus Cembra*, *Pinus Lambertiana*, *Pinus Laricio*, *Pinus ponderosa*, *Pinus radiata*.

July 28th 1879.

Lilburn Tower. By Mr JOHN DEAS.

I am just now busily engaged in cutting down shrubs that have suffered most here by the hard winter. They are chiefly Common Laurels and Rhododendrons. Cyprus and Red Cedars have also been hurt a good deal. Arborvitae are very much broken by the weight of snow; even the Yews, hardy as they are, are very much browned, and likewise the Ivies. The Portugal Laurel has stood almost uninjured. Roses: Standards all killed; Dwarfs killed to the snow-line; Biennials all killed; Broccoli totally destroyed; in fact little of the Cabbage tribe left alive, and I fear some of the fruit trees are injured, Pears especially.

Lilburn Tower. By Mr THOMAS ELLIOTT.

Feb. 3, 1879. A great many birds have perished with the severe storm. I found a great quantity of blackbirds after the last storm, that appeared to have been frozen to death with two nights of intense frost that we had here, as the birds were in good condition. The thrushes have all disappeared from this neighbourhood. Partridges and wood-pigeons suffered very much. We commenced to feed the partridges in the turnip fields, with hay-seeds, which saved a good many. There have been a great quantity of snipes, woodcocks, and ducks about the Aller Burn these last few weeks.

Rock. By Mr JAMES CLEUGH.

Effects of last winter's frost on shrubs and trees :—

Lauristinus most injured; Common Laurels a little injured; Sweet Bays much scorched; *Escallonia* much scorched; *Menziesia* banks much scorched; Rhododendrons, in exposed places, much scorched; *Rhododendrum arboreum* (white) uninjured; about 30 flowers coming out. *Rhododendrum ulstroclarens* (scarlet), coming out full of flower; *Phillyrea*, a little browned; Portugal Laurels not at all injured; Azores Laurel not injured. Some of the tender Roses cut down, many came again from the root. *Wellingtonias*, a little injured where exposed. Pines, the various sorts not hurt, except one, *insignis*. Fruit trees in general are promising. This, as far as I can see, is the extent of damage done.

April 29th, 1879.

Mr Bosanquet, in supplying this report, states, that they have not suffered much at Rock :—

The thermometer has not, I believe, been below 13 degrees (19 below freezing), that was in the middle or end of January; on the 13th of December it must have been nearly as low. We have only a few Conifers, mostly of hardy kinds, in the pleasure grounds. The *Wellingtonia* will not stand our winds, several promising ones have become thin and bare; only those in sheltered situations have a chance. The *Cembra*, *Nordmanniana*, *Thuopsis borealis*, *Thuja gigantea* do capitally. The *Laurus Azorica* does well too.

Subsequently *Pinus Austriaca* manifested symptoms of being harmed. On September 12, 1879, it was still quite brown, excepting just at the top, and looked as if it would hardly recover. Another *P. Austriaca* was somewhat browned, but a third has not suffered at all. The Pines in question are between 30 and 40 years of age. Mr Bosanquet says, "they have always hitherto seemed quite hardy, so that I should think there must have been something unhealthy about the individual tree in question."

Alnwick Castle. By Mr Coxon, Wood-Bailiff of the Duke of Northumberland.

A great many of the Common Laurel cut down by the frost ; also *Aucuba Japonica* ; and many of the Climbing Roses.

There is very little damage done to forest trees generally, but Larches in some districts are looking very unhealthy, but I think it is more from the ungenial summer than from the hard winter. Oaks have suffered very much in some parts of the country from the caterpillars, being completely denuded of their leaves. [The caterpillars probably of *Tortrix viridana*.]

A good many of the Hybrid Rhododendrons are more or less hurt ; but *Ponticum* is very little the worse.

Many of the Coniferæ have suffered considerably. The Deodar Cedar has not lost many of its tops, but it looks sickly, and is not getting its foliage well ; and the same may be said of the *Araucaria imbricata*, and *Pinus Pin-sapo*, *P. Strobis*, and *P. excelsa*. The most hardy, and likely to make good timber trees, of those lately introduced, are the *P. Nordmanniana*, *P. nobilis*, and *P. Douglassi*, more especially the last, as the timber, when matured, is one of the best in the market. In certain situations it is by far the fastest grower. We have them growing in the Park here, not more than fourteen years from the seed, 25 feet high. We also have them under 50 years old, with upwards of 100 cubic feet in them.

[The *Wellingtonia*, which is as fast a grower as the *Douglassi*, though not considered so good a timber tree, has not suffered.—F. H.]

The Gorse has been nearly all cut down.

August 11th.

From an Agricultural point of view.—Mr JOHN PATTEN, of the Park Farm, Alnwick, remarks :—

The past severe winter was very trying both to animal and vegetable life. Notwithstanding extra care and attention, animals of almost all kinds showed, at its close, unmistakeable signs of its severity. The feathered tribes, small birds in particular, have perhaps sustained the greatest havoc, owing to the intense cold, and their inability to reach their food. The silence of the woods, and the absence of marauders in our gardens substantiate this fact.

The destruction of a certain class of animal life, which is a benefit rather than otherwise, is seen in the great diminution of grub [of *Tipula oleracea*] this summer, as compared with last, the larvæ, no doubt, having in many

instances, been destroyed. *Vegetable life* has also suffered. A portion of autumn wheat on cold clay soils perished, and the crop in spring presented a very unpromising appearance, while grass left, and intended for winter feed, was cut down by the frost. Turnips not stored, and intended for sheep feeding, before long rotted, and the value of the crop was considerably diminished.

August 11th.

Stannington, Cramlington. By the Rev. AMBROSE JONES.

With regard to the damage done by the late severe winter, in this neighbourhood, I have little to record of interest. The road in front of Stannington Vicarage is marked on the Ordnance Maps as 202 feet above the sea. The house faces due south. One large Gloire de Dijon Rose, on that side, was entirely destroyed, while another of equal size on the wall facing *west* escaped all injury. Two fine specimens of *Cotoneaster*, planted ten years ago on the south wall, suffered much, and some younger ones were killed. Some young Lombardy Poplars met the same fate. The Roses planted in the open were a good deal injured by the frost, especially those budded on briars. They have now pretty well recovered, and are in better bloom than I have seen them for years. One shrub, the *Escallonia rubra* suffered in some degree.

With regard to the diminution of birds—robins, blackbirds, and thrushes—of which we used to have great numbers, have almost entirely disappeared. Sundry robins took refuge in the greenhouse, and were able to go in and out through a hole, which I purposely kept open for them. They were regularly fed, but after a time died or disappeared. The house-sparrows weathered the storm, and are as plentiful as ever. There are also many chaffinches and bullfinches. On December 13th the thermometer stood 3 degrees below zero.

August 7th, 1879.

Stamfordham. By Rev. J. F. BIGGE.

Towards the end of the year 1878, all the starlings disappeared, and so did the song thrushes. The wild ducks, which frequent the Whittle Dean reservoirs for the supply of Newcastle, usually in a frost are to be found in the streams in the neighbourhood, but I have for long remarked that when the storm is going to be severe and last a long time, they go away, probably to such places as Seaton Slake, at the mouth of the Tees. Last winter, after a few days frost, they all disappeared. The greenfinch also went away; I heard of 13 being picked up after a very severe frost under some stacks at Nellburn, Ovingham, on the Tyne. The only birds we had here during the storm were titmice, sparrows, chaffinches, hedge-sparrows, blackbirds, robins, wrens, and rooks. The robins have been sadly thinned; they came into houses, and got so tame that they were pounced on by the cats, and I know of many that were killed in this way.

As regards shrubs, the frost which was at zero two consecutive nights has done much havoc.

KILLED TO THE GROUND.—*Anagyris Nepaulensis* on a wall, *Ceanothus Lobbi* also on a wall; Double Whin, Common Broom, English Laurels above snow-line; Privet in some places dead.

PARTIALLY INJURED.—Portugal Laurels much singed, Sweet Bay, Yews, *Pyrocanthus*, *Mahonia* (*Berberis*) *aquifolia*, Heart-leaved Ivy.

UNTOUCHED.—*Wigelia rosea*, Jasmine (Yellow).

Birds' arrival at Stamfordham, 1879 :—

Wheatear, April 16th; redstart, April 23rd; swallow, April 25; cuckoo, April 28th; sandpiper, May 1st; sandmartin, May 14th; swift, May 15th; corn-crake, May 18th; flycatcher, May 25th.

Hedgeley, Northumberland. By RALPH CARR-ELLISON, Esq.

Just before the first hard weather last November, and during the whole of October, I had been surprised at the great activity and lively gracefulness of the common wrens (*Troglodites*), which seemed to be present at Dunston Hill, in unwonted numbers. Probably they were in more high plight than ordinary; the insect world and their favourite spiders being doubtless numerous after the very high temperature of August and September. But after the first or second spell of severe weather, not a wren was to be seen or heard throughout the winter. They never came with redbreasts and "hedgies," blackbirds, tits, and sparrows to feed on crumbs, &c., at our windows any more than in preceding years. They do not seem capable of partaking of scraps of meat or fat, dressed or raw, like the tits, but are sometimes found frozen to death in outhouses, whither they have gone in search of spiders. A few, and only a very few, have survived both at Dunston Hill and at Hedgeley, as I believe they undergo hibernation in cavities, chiefly under the foot-roots of large trees, such as are frequented by mice. And as wrens roost in haystacks in groups of half-a-dozen together, so I fancy they may seek mutual warmth in old mouse-nests through such a winter as we have had. There seems to be thus pretty strong evidence that our little *Troglodite* is capable of enduring torpidity in winter, for a time, if it retires whilst in good condition and in parties together, as we know it often roosts, for boys catch them so, when procuring sparrows at night in stacks.

Blackbirds (all males but one) were fed with the robins on four sides of my house at Dunston Hill, two were repeatedly in my dining-room. They are almost as numerous as usual this spring, at least the cock birds, and singing merrily, but I believe the hens to have returned in but small numbers from their winter-haunts near our coasts. Thrushes are singing only here and there, at either Dunston Hill or Hedgeley. The missel-thrush came through somewhat better, wheresoever it may have wintered. One solitary missel used to come with our blackbirds for food, and I think lived by robbing them of crusts of bread which they carried away. In like manner lived a solitary jay, too sly to come quite to the windows. I also laid supplies of white peas for him, but am not sure that he took the hint. No doubt he had an eye to any sickly robin too. Chaffinches (all males) came regularly with

the sparrows and wintered admirably by help of hemp-seed, which I got for the sparrows to save bread. Green-linnets are plentiful this spring; they are very hardy against cold and pass the winter, as you will have observed about the foldyards and stackyards in the Lothians, the Northumberland coast-country, East Yorkshire, &c. Grey-linnets are never common either at Dunston Hill or Hedgeley, preferring the open coast-country and the links. But the little redpole breeds regularly around Dunston Hill. Its nuptial flight is extremely lofty, its song being delivered as it flies in large wide circles or excursions higher than the skylark goes. If I mistake not, it is abundant this spring. Skylarks plentiful this spring, also the tree pipit. Skylarks are described as wintering in vast numbers in the great valley of the Ebro, in Arragon.

Columba oenas, the stock-dove, breeds for the third summer at Dunston Hill. It is not at all shy, likes to be near a house, but yet is very little seen, and its low quiet cooing excites hardly any attention. It is most heard early of a morning. I think it is this year nesting among thick ivy.

Quercus ilex is quite killed at Dunston Hill and Whickham. *Araucarias* have stood quite unhurt. *Wellingtonia*, *Cupressus macrocarpa*, and *Thuja borealis* all unhurt. *Cryptomeria Japonica* hardy and doing better than any thing on soils too dry and gravelly or shaly for the others I have named, or for *Cupressus Lawsoniana*, which is also quite hardy and thoroughly naturalised by abundant seedlings. *Mahonia aquifolia* is hardy everywhere with us, except under shade.

Berberis Darwinii is, alas! killed like the native whin, but is springing again from the root. Its fine orange inflorescence at this season is much missed. Sweet Bay killed down but ready to spring again. *Garrya elliptica* considerably hurt, but not so as to require being cut down, and it is budding forth readily.

The beautiful *Laurocerasus Azorica*, nearly akin to the Portugal Laurel, has come very well through at Hedgeley. *Arbutus* half-killed. Portugal Laurel unhurt. *Laurocerasus Caucasica* very tall and robust at Hedgeley, and quite unhurt. Its blossom is like that of its near ally, the Common Pontic Laurel, and now very showy at Hedgeley.

The *Rhododendron ponticum* is quite unhurt. Also many fine Hybrid Rhododendrons, scarlet, white, and crimson, uninjured, and now in lovely flower.

Hedgeley, June 16th, 1879.

ROXBURGHSHIRE.

Springwood Park, Kelso. By Mr GEORGE WEMYSS.

The following is the temperature of the months of December, January, and February, for the last ten years—showing the mean mean of each month, and the mean of the three months of each winter.—

YEAR.		MEAN MEAN.	MEAN OF THE THREE MONTHS.
1869.—December	..	30°.70	} .. 32°.27
1870.—January	..	32 .51	
February	..	33 .60	

YEAR.		MEAN MEAN.	MEAN OF THE THREE MONTHS.
1870.—December	..	30°.35	} .. 32°.78
1871.—January	..	28 .61	
February	..	39 .39	
1871.—December	..	33°.16	} .. 39°.52
1872.—January	..	36 .25	
February	..	39 .17	
1872.—December	..	35°.83	} .. 36°.15
1873.—January	..	38 .30	
February	..	34 .28	
1873.—December	..	43°.54	} .. 41°.30
1874.—January	..	41 .71	
February	..	38 .67	
1874.—December	..	29°.97	} .. 35°.16
1875.—January	..	39 .80	
February	..	35 .71	
1875.—December	..	37°.57	} .. 37°.50
1876.—January	..	37 .95	
February	..	36 .98	
1876.—December	..	39°.34	} .. 39°.44
1877.—January	..	37 .18	
February	..	39 .82	
1877.—December	..	39°.62	} .. 38°.19
1878.—January	..	38 .42	
February	..	36 .54	
1878.—December	..	25°.75	} .. 29°.01
1879.—January	..	28 .06	
February	..	33 .22	

You will observe how low the temperature in December was the mean maximum being only 2°.67 above freezing; and the mean minimum on less than 15°.17 below the freezing point, thus giving a mean mean of 25°.75. The lowest point reached during the winter was on the 17th of the same month, when the thermometer went down to 3° below zero.

As regards the disastrous effects of the low temperature on vegetation during the past winter, I find it difficult to speak, for as usual circumstances have so much to do with the results; and I confess I have not given the matter that amount of investigation this spring it would require in order to go into details minutely, which I had hoped to have been able to do. In the kitchen garden the *Brassica* suffered much, for example, broccoli, a third of it was destroyed, and what was left produced very small heads, which prematurely went to seed.

The fruit-buds of some of the finer kinds of pears are destroyed. Peach trees on the open wall have escaped with a bare existence. All sorts of tender Roses are either killed or have been cut down to the surface of the ground. Laurels in low situations are a good deal hurt; they are, however, putting forth young shoots from the old wood. The following may also be mentioned as having suffered.—Sweet Bay, Variegated Holly, Lauristinus, Cedrus Deodara, Aucuba Japonica, Garrya elliptica, &c.

June 20th, 1879.

Memorandum on the Effects of the past Winter on Gardens and Shrubberies as observed at Woodside, Kelso. By CHARLES DOUGLAS, M.D.

Although not much above the level of the Tweed, and therefore subject to a temperature during the frosts of winter lower than our neighbours have in higher grounds, I think, now that summer is trying to declare itself, that we have suffered less than many from the past severe winter. I find, however, that the damage to shrubs is greater than it appeared to be two months' ago; Laurels especially still shew dying branches, and the outside leaves and twigs in many places have still an unhappy look; but as far as I have observed, the only losses in the shrubberies have been a Barberry, which was in great beauty last year, and an Evergreen Oak. Another of these Oaks was much punished, but is now recovering, and the Laurels generally are throwing out vigorous shoots from the larger stems.

Several of our climbing Roses have been killed outright, notably a *Maréchal Niel*, which, in a snug corner, had flowered in the open the two previous years. Our Roses generally looked miserable, many apparently dead, but now most are coming away wonderfully, and with fine weather may still make a respectable appearance. There was a very fair display of Pear blossoms, but although the weather lately has been, in spite of N.E. winds, comparatively mild with no frost at night, I can scarcely see any fruit set, which is disappointing, as there seemed a fair promise of a good crop after two years of barrenness. The lowest temperature marked this month was 34° on the morning of the 1st, and the general average since the 1st, of the minimum has been 42°.

The Apple trees are scarcely sufficiently advanced in fruiting to give a fair opinion of the prospect, but I am afraid, from the appearance of the blossom after late dashing rains, that the chance of a fair produce is also very small. The *Rhododendrons*, of which we have only the later and hardier kinds, do not appear to have suffered at all.

I have noticed that last year, Thorn hedges were shewing green on March 3rd, this year they were no farther advanced on April 27th. Hawthorn blossom on trees was noted as partially out on the 15th May; this year on the 16th June.

Last year *Mahonia* flowers were shewing on March 17th, this year on May 18th. Last year *Laburnum* was out on May 19th, this year on June 4th. Last year the common double white Lily was out on May 18th, this year on June 4th. Last year Apple blossom was well out on 18th May, this year on 15th June. Last year *Rhododendrons* were shewing blossom on 1st June, this year on 15th.

The lowest temperature registered during the winter was on the morning of the 13th December—1° below zero.

June 19th, 1879.

Kelso. By Mr ANDREW BROTHERSTON.

March 10, 1879.—It is impossible, as yet, to judge with any degree of certainty, the effects of the winter on plants; but, so far as I can see, it will

not be so destructive as that of 1860-61, when most of the Laurels (both Portugal and Bay) in this district were either killed to the ground or so seriously damaged that they had to be cut over. The little damage they have sustained is chiefly confined to gross young shoots—the result of severe pruning—or to half-smothered plants, from which sufficient light and air are excluded. The previous summer and autumn have much to do with the manner in which such plants stand the succeeding winter. If the young growth is well ripened, they can resist a much greater degree of frost than when they make a late ill-ripened growth. If last winter had followed the summer and autumn of 1877, there would have been a different tale to tell. I may mention the effects on a few well-known plants. *Araucarias* are for the most part unhurt, but some are very brown. The leaves of many hollies, especially the variegated varieties, are seriously damaged. *Rhododendrons* (*R. ponticum*) and *Aucubas* are unscathed. [I have since seen some plants of *Aucuba* which were transplanted late in the spring that are much cut up.] *Lauristinus* is much cut up, the flowers all destroyed. *Garrya elliptica*, which usually stands the winter well, is very much damaged. I may say the same of *Cotoneaster microphylla*. Penstemons, Antirrhinums, Wall-flowers, &c., many killed. Spring flowers are late. I have seen only one Daisy. Snowdrops, Winter Aconites, Christmas Roses, Hepaticas, and *Bulbocodium vernum*, are now in flower; but Crocuses are not yet out.

Ormiston House. By W. B. BOYD, Esq.

I have to report the following amount of damage done to trees and plants by frost during the last winter at Ormiston House, Kelso. Lowest reading of thermometer, 5 degrees below zero. A large proportion of the Oak trees, near the river Teviot, have the last year's wood killed off. Spanish Chestnuts and old Apple trees much the same.

Plants killed to the ground:—Portugal Laurel, Common Bay Laurel, many of the tenderer kinds of Ivy, *Ceanothus dentatus*, *Escallonia macrantha*, *Escallonia rubra*, *Escallonia Montividiensis*, *Pernettya mucronata*, *Cercis Siliquastrum*. Nearly all the Roses killed to the ground. Most of the points of *Araucaria imbricata* killed back three inches. *Abies Douglassi* very brown, *Cryptomeria elegans* very brown, *Thuja aurea* very brown, *Juniperus recurvus* very ditto. All the blossom at least a month later than usual.

1st July, 1879.

On the Lateness of the Spawning of Salmon during the Spring of 1879, Salmon Disease, &c. By FRANCIS RUSSELL, Esq., Sheriff-Substitute of Roxburghshire.

In compliance with your suggestion, that I should send to you some notes as to the unusual lateness of the spawning of Salmon in our rivers during the last season, I can give you what information I have on this curious and interesting point. I have not had many opportunities of personal observation bearing on this subject; but I caught in the second week of April, in the Teviot at Sunlaws, a Bull trout of about 6½ lbs., which looked in good con-

dition ; and when opened, was found to be a female fish, as yet unspawned, but with the ova well developed, and plainly near spawning. In the sworn evidence of water-bailiffs, several instances were stated of salmon which had not completed their spawning as late as the first week in May. In like manner, the exceptional nature of the weather has this year retarded the development of the water-flies, and so late as the 17th May last, I saw the familiar " March brown " in some abundance on the Tweed at Melrose. The earliest appearance of this fly was unusually late ; but I cannot name the precise date of its first appearance.

The salmon disease, known to naturalists as the *Saprolegnia ferax*, appears to have been very destructive in the Tweed and Teviot, in both of which rivers large numbers of dead fish are observed covered more or less with this fungus. It has also attacked Trouts, which I have seen swimming with this parasite on them ; and it appears to have been especially fatal to Graylings ; and I am told, also to Eels. With reference to Graylings, I may mention that I found, some weeks ago, a dead one on the channel opposite to Mertoun House, shewing that this fish had advanced thus far up the Tweed.

This peculiar disease is to be made the subject of a scientific inquiry, and I fear I can throw no special light on its causes. It is not *new* in the Tweed. I well remember a good many (perhaps about 6 or 8) years ago, when fishing in late spring for trouts about Old Melrose, to have observed Salmon, shewing a similar fungus growth on them, swimming about in a helpless condition close to my legs, as well as dead fish lying on the channel, or in the water, similarly marked. The fish had been detained in the river that season to an unusually late period. The number of Whitlings in the Tweed and Teviot this spring was very great, and they remained in the rivers much later than usual ; I mean fish that had spawned ; but, on the contrary, Salmon Kelts were unusually scarce ; and I was told at Mertoun that only *two* Kelts had been landed with the rod this season in that part of the river.

As to the effect of the cold, long winter on plants, I have little to add to what you will have to state, or have already stated. The Wall-flower plants were nearly all killed, unless specially protected ; and a considerable number of Roses—nearly all *Standard Hybrid Perpetual*—were also killed.

On the other hand, the Spring Flowers have been in great profusion and beauty ; Primroses especially ; and the Hawthorn, now coming into bloom here, is in greater abundance than I ever saw it before. On some of the branches the flowers form a solid mass.

June 23, 1879.

SELKIRKSHIRE.

On the Effects of the Winter 1878-9 on Gardens and Shrubberies in the neighbourhood of Selkirk. By the Rev. JAMES FARQUHARSON, M.A., Selkirk.

The six-months' winter of 1878-9 seems to have been much less injurious to vegetation in this high-lying district, than in many other parts of Scotland nearer the level of the sea. Nor have the prolonged periods of hard

frost, and the repeated heavy snow-storms been so hurtful as the shorter but more intense frosts of such winters as that of 1860-1. Still, gardens and shrubberies have suffered a good deal, and the Club may find interest in some facts which I have either observed myself, or gleaned from a pretty general inquiry among persons likely to give accurate information.

The first shower of snow fell here on October 29th, followed at an interval of a few days by a regular snow-storm; the last snow, as far as I observed, fell on the 9th of May. Thus we had fully six months of winter; and the period between these dates was characterised here as elsewhere, not by short sudden dips into intense cold, but by a uniform low reading of the thermometer, bringing the average *maxima* and *minima* much below what is generally observed. At Bowhill (elevation 595 ft.), one of the Scottish Meteorological Society's Stations, the average monthly readings were as follows:—

1878.		MAX.	MIN.	1879.		MAX.	MIN.
October	..	53.19	43.26	January	..	34.25	23.58
November	..	41. 1	32. 6	February	..	36.96	28.57
December	..	34.09	25.32	March	..	42.30	31.23
				April	..	47.10	33. 8

The lowest readings were—in November, 29th, 24°; in December, 14th, 10°, 24th and 25th, 19°, and 26th, 17°; in January, 20th, 6°, 24th, 7°, and 27th, 10°; in February, 25th, 18°, and 20th, 19°; and in March, 14th, 12°. In April there was a sudden fall on the 19th to 23°.

Down to the end of February evergreen shrubs seemed to suffer little, a fortunate result to be ascribed, perhaps, to the unusual stillness of the weather; but when March arrived with its bitter N. and N.E. frosty blasts, they visibly yielded to the fierce assault. But for the unusually severe March and April, I think we should not have found more injury done than in an ordinary winter. As things are, however, what I have noted is, that in flower gardens herbaceous plants have come through much as usual, and the freezing of the ground for a long period to the depth of 18 or 20 inches, does not seem to have affected hardy bulbs. Roses have been a good deal disfigured,—cut down but not destroyed,—the only Rose in my garden quite dead being an Austrian Briar. In the kitchen-garden there has been no little havoc, the whole Cabbage tribe having been well nigh annihilated, so that there is a dearth of spring vegetables. Broccoli, which never promised better in the end of autumn, was reduced to pulp; Brussels Sprouts stood longer, but became useless ere the end of winter; and autumn-planted Cabbage (Macewen's) proved but a ragged regiment when the snow melted—most of the plants killed, and such as survived proving so weak that they never "hearted," but shot up into feeble flower stems.

Among the shrubs about the Manse (530 feet above sea), the common Laurel (*Prunus Lauro-Cerasus*) and Evergreen Oak (*Quercus Ilex*) have suffered most, none being killed, but the foliage much damaged, indeed stripped from large portions of the bushes, so that we must wait for the young leaves, which are growing vigorously, to clothe them again. *Portugal Laurel*, *Holly*, *Aucuba*, *Mahonia*, *Weigelia rosea*, *Berberis dulcis*, and *B. Darwinii*, &c., are untouched.

Around Bowhill comparatively little injury has been done. The fine old Rhododendrons (*R. ponticum*) are untouched, and promise a profusion of blossom. *Quercus Ilex* has suffered there also, and the common Laurels, just as about this house, scathed but not ruined. The common *Yellow Azalea* is quite safe, and covered with flowers. But *Laurustinus*, *Arbutus*, *Phillyrea*, have been cut down, and show no sign of sprouting from the root. *Escallonias* of different species have also suffered much.

At Sunderland Hall (under 400 feet) a fine *Berberis Darwinii* trained on the lodge, has been cut down to the ground, but is sprouting from the root; and a like calamity has overtaken an old Fig-tree on a south wall, which has stood the frosts of upwards of 40 years. It, too, is showing life at the crown of the root. Wellingtonias and Deodars, with several other Conifers scattered over the grounds, are safe and vigorous, as is also a splendid collection of Hybrid Rhododendrons, at present (June 24th) in magnificent flower. Portugal Laurels are for the most part safe, and *Mahonias*; but I observed here plants of these two species quite dead in immediate proximity to others alive and flourishing. No difference in soil or shelter could explain this diversity, which, I fancy, must be due to differences in the vigour, or as one may call it, the "constitution" of individual plants.

Throughout the country generally the Whin and Broom have been much damaged, in some places killed, in others greatly injured from the ground upwards, although now showing much blossom on the highest branches.

The foliage of forest-trees, and blossom on such as flower conspicuously, *i.e.* Chestnut, Laburnum, Lilac, &c., are unusually massive and rich; as was the blossom on fruit trees in the garden and orchard. The six months' winter, fortunately, has not counteracted the wood-ripening processes of last year's splendid summer.

Selkirk Manse, 24th June, 1879.

Galashiels.

Writing from Galashiels, Sept. 9th, 1879, Mr JAMES WOOD remarks on the scarcity of birds:—

"In our glen we used to have several wrens' nests every summer. This year we have none. The birds must have all perished last winter. We used to have also a great many yellow-hammers and ox-eyes. We fed these for a good while during the winter, but their number got fewer and fewer every morning, until all had perished. I have not seen a yellow-hammer or a tom-tit in our neighbourhood this summer."

It was, perhaps, owing to the extremely cold summer consequent on the shadow cast by the dreadful winter over the entire season, that the following circumstance occurred, of which I owe the recital to Mr SMAIL, now of Kirkcaldy:—

Gooseberries in October.

On 7th October, 1879, I gathered Gooseberries from several bushes in Fernieknowe garden, Galashiels, belonging to Mr Cochrane. The fruit was no more than fairly ripe; and was fairly well-flavoured, considering that it was gathered from the lower shaded branches. No artificial preservation had been tried.

Notice of Stone Cannon Balls, found in Parish of Swinton, Berwickshire. By DAVID MILNE HOME, Esq., of Milne-graden, LL.D., &c.

HAPPENING to pass through the village of Swinton one day last autumn (1878), I observed in a small garden plot adjoining the principal inn, what appeared to be a large Cannon Ball of Stone.

On asking the innkeeper the history of it, he informed me that it was one of five or six which had been found together in the river Leet, in 1865, when its channel was being altered; and that his idea was that they had belonged to the large cannon known by the name of Mons Meg. He added that when in Edinburgh lately he had gone to the Castle, and found that Mons Meg has a mouth large enough to admit the ball; and that there were lying beside the gun several Stone Balls apparently about the size of the one in Swinton. He said that some one had told him it was known to readers of Scotch history that Mons Meg was at the siege of Norham Castle in the time of King James IV.

The above six balls were thus disposed of. Mr Chalmers has one at Swinton Inn. The Rev. Mr Sherar, F.C., Swinton, has one. A third was got by Mr White, which is now at Milne-graden. Mr Hannan, of Dunse Castle, took away the other three. One of these is now at St. Mary's Cottage, Dunse Castle. Mr Chalmers thinks the other two were sent by Mr Hannan to Edinburgh.

I went to Swinton House and saw there three stone balls—two are in the garden on a wall. The third is at the end of the house occupied by the farm steward. This last one I found has a girth of $58\frac{1}{2}$ inches. He said it had been found in the river Leet, at the back of his house. The other two in the garden seemed to be of smaller size. Mr Chalmers did not know their history; but he was sure they had been in the garden more than 40 years.

The ball at the steward's house has inserted into it a piece of iron, and a groove has been made at each side in connection with this bit of iron. It is probable that the object of this was to convert it into a heavy weight for a cheese press.

There is another stone, somewhat smaller, at a cottage door in

Swinton village with a bit of iron in it, which is supposed to have been used for a similar purpose.

On obtaining this information, I asked Mr Cossar, of Greenknowe, to have the goodness to enquire as to the exact spot where the Balls were found, and in what position they had been lying.

He did make enquiry, and he writes to me, that when the channel of the river Leet was lowered in the year 1865, five Stone Balls were found at the side of a bridge over the river to the north of Swinton Mill, on the property of Colonel Trotter of Charter Hall. Mr Cossar says the Balls were at the S.E. side of the bridge, placed apparently so as to guide the water through the arch of the bridge. The bridge (Mr Cossar adds) was repaired in the year 1745.

I went to Edinburgh Castle and examined Mons Meg. The gun rests on a handsome iron carriage, bearing the following inscription :—"At siege of Norham Castle, in 1497."

On measurement, I found the mouth of the gun to be twenty inches across, and that the inside bore becomes slightly smaller towards the breech. The length of the gun is 16 feet.

It has evidently been made with longitudinal iron bars, outside of which other iron bars have been hooped round and across the former.

I found six Stone Balls lying beside the gun, the largest of which is about 42 inches in girth. The others are 35 or 36 inches.

Having, through the good offices of Mr Cossar, obtained possession of one of the Stone Balls, I find that its girth is 56 inches. It is apparently of limestone, as vinegar poured on it causes effervescence.

The Ball at Swinton village has a girth of 58 inches, and is said to be of grey granite.

Lately on visiting Norham Castle, I found near the porter's lodge a Stone Ball, with a girth of 57 inches, which I learnt had some years ago been found in the river Tweed, a few hundred yards to the west of the Castle. The spot where it was found is in a line between the Castle and Ladykirk village. An old grass field to the east of the village shows the remains of military ramparts, where artillery might suitably have been stationed for firing on Norham Castle. The probability therefore

is that Mons Meg had been brought to this field, and that a Stone Ball fired from it had fallen short of the Castle and fell into the Tweed, where it had lain till discovered on the occasion just referred to, when the river was unusually low. The Ball was drawn out from the channel by some of the Norham fishermen, and was taken up to the Castle in a cart.

Thinking that Scottish historical books might throw light on the subject, I went to the Library of the Society of Scottish Antiquaries, and obtained access to a book containing copies of extracts from the Scottish Lord High Treasurer's Accounts, in which all expenditure by or for the Scottish Executive Government is minutely detailed. There is a valuable preface by Mr Dickson of the Edinburgh Register House, which supplies the following particulars:—

“*Mons Meg*” is supposed to have been constructed at the town of Mons, in Flanders; and to have been brought to Scotland about the year 1455. At that time there was great intercourse between Scotland and Flanders, and many articles were obtained from Flanders. Prior to 1497, occasional references are made to the gun under the appellation only of *Mons*. In July, 1489, it seems to have been taken to Glasgow to assist in the siege of Dumbarton. In the year 1578, the gun is still referred to in the Treasury Accounts, under the name of *Mons*. In the year 1650 it is referred to in these accounts as “*the great iron murderer Muckle Meg*.”

In the early part of the summer of 1497, preparations began to be made in Scotland for a siege of Norham Castle. It seems that the expense of military expeditions at that period was arranged in this way:—That the king made a proclamation of a *raid* having been resolved on, and that thereupon each district of country was bound to send a certain number of men, provided with arms and also with provisions to last 21 days. The cost of the artillery fell on the sovereign personally.

Mr Dickson states that a tax called “Spear Silver” was on such occasions leviable from the inhabitants of towns; but that in order to obtain exemption from supplying soldiers and from paying this tax it was allowable to contribute a slump sum of money. The following entries illustrate this point:—

“1497. July 18.—Received fra the community of the toune of Perth, for ane composition maid with thaim be the King, for leif to them to remain at hame *fra the Raid of Norem*.”

“24th July.—License was giffen to the toune of Dundee, to remane at hame, fra the host at this time, for the soume of 450 crowns of gold, giffen be thaim to the furth bringing of the King’s artillery.”

To obtain the full sum necessary to defray the king’s expenses in sending artillery to Norham, it is mentioned by Mr Dickson, (from entries in the State Accounts) that the king had to sell a certain *great chain of gold*, and other personal ornaments. He appears also to have sent the hat round among the nobility, as in the State Accounts credit is given for many donations towards the raid; one of £100 being from David Home, of Wedderburn.

It appears that much expense was incurred in equipping *Mons Meg* for joining in the expedition. One hundred workmen and five carpenters and smiths were hired by Sir Robert Ker, the master of the artillery, *to pass with Mons alone, i.e.* to attend to her exclusively.

It will be seen also from the entries in July, 1497 (annexed hereto), that a *cradil* or carriage was made for *Mons*, and *canvas* to cover her—as well as *tows* or *ropes* to draw her.

At this time *Mons* was in Edinburgh Castle. After her *cradil* was made, she was drawn *downe the gait*—that is, the Canongate, to the Abbey of Holyrood, where the rest of the artillery probably was collected. It had been made a public ceremony, as there is a payment to the *Minstrels that playit before Mons, downe the Gate*.

The first attempt to start *Mons* for the Borders was unsuccessful. For, as Mr Dickson observes, “the great gun broke down before the outskirts of the town were passed.” Accordingly there is an entry on 24th July for carrying *trees* to be *Mons* new *cradil*, to her at St. Leonards, where she lay.

This mishap delayed the setting out of the expedition. The extracts show, that on the 6th August six horses were employed to draw *Meg* to “Norem.”

Mr Dickson says that the King, impatient of the delay, had started for the Borders on the 20th July, and repaired to Melrose, where there was to be a general gathering of troops. He probably started from Edinburgh on the 19th July; for on that day there is an entry of a payment to a woman who brought strawberries to the King at *Dryden*, which is a village in Mid Lothian, on the way between Edinburgh and Melrose.

On the 7th August, Mr Dickson says the King had established his quarters at *Upsetlington*, on the north bank of the Tweed, immediately opposite Norham ; and he is found there playing cards with the Spanish Ambassador, and others of his retinue. This was no good trait of the King, when he ought to have been looking after his troops, and planning the siege of a most formidable stronghold.

Mr Dickson observes that “the Bishop of Durham (to whom Norham Castle belonged) being forewarned of King James’ expedition, had garrisoned and strengthened the Castle so effectually that the King found it impregnable. News at the same time came of the rapid advance of the Earl of Surrey with a numerous force. King James immediately withdrew into Scotland. Surrey followed, hoping to overtake the retreating army, and failing in this, laid siege to Ayton Castle.”

On the 30th September, 1497, a truce was entered into between “England and Scotland, to last for 7 years. It was signed in the Church of Ayton, on behalf of King James by Andrew Forman (Prothonotary and Prior of May), Patrick Home of Fast Castle, and Mr Lawson, Justice Clerk of Scotland. Hostilities being thus at an end, orders were given for the home bringing of the artillery, and Sir Robert Ker accordingly collected and brought back to Edinburgh the guns which had been placed at Wedderburn, Home, and other strengths on the Borders.”

“During the hostilities of this and the preceding year, the lands on the East March (holding of the Crown), had suffered so much that an abatement was allowed on the rents,—“*propter vastitatum terrarum de Hersell, Gradene, Letheme, Grenlaw, et Birgham, vastatas per guerras Anglorum.*”

Mons Meg was, in the year 1745, carried off from Edinburgh Castle to the Tower of London, where she remained till the year 1825. It is understood that the gun was restored to Scotland, by means of a personal application by Sir Walter Scott to King George IV., when His Majesty visited Scotland.

It is uncertain where the quarries were from which these large Cannon Balls were taken. The Treasurer’s Accounts show that there were quarries belonging to government at Dunbar and Stirling. In the Lord Treasurer’s Accounts, frequent reference is made to one *Johne Quarreour* ; this surname being synonymous with our word “quarryman ;” and this *Johne* is also spoken of

in the Accounts as one of the gunners, whose duty it was to obtain Stone Balls for the artillery. In the Extracts of 5th and 6th August, payments are entered as made for "Gun-Stanes that were new made," to go to Norham, and which required six horses to draw them.

It is evident, therefore, that the six Stone Balls found in the channel of the Leet were balls which belonged to "Mons Meg." How they should have been left there, can only be matter of conjecture. It is possible that when Mons Meg, with the rest of the Scotch artillery, was being brought back to Edinburgh, the retreat may have been so hurried, that the balls were left behind. The passage of the Leet would, no doubt, be difficult for any carriage or vehicles which conveyed balls of such size and weight; and one may have broken down so completely, that there was no way of extracting the balls from the moss or mud which abounded on the low flat through which the river Leet meandered.

I heard a report that at or near the place where the balls were found the bones of a horse, and some iron bars were found. In that case the probability of this last conjecture would be strengthened.

In Boston's Biography there is notice of a lake which, even in his time, covered a part of the meadow where the Stone Balls were found, and he mentions that on one occasion when he was fording this lake his horse *laired* in the mud, and it was with difficulty he got out.

*Extracts from State Accounts kept by the Lord High Treasurer
of Scotland.*

1496.—To Johne Quarriour, for correking of gun-stanes, £4 2s.

1497. April 5.—To 4 miller quarreours at Dunbar, for stanes wyning.

April 7.—To Johne Quarreour, for the redding of Dunbar, at the mason's mycht wirk.

(Johne Quarreour was one of the gunners who had charge of the artillery)

April 10.—Giffen to John Mawer, elder, in part payment of quhelis (wheels) making to the Bombards and to *Mons*.

April 10.—(Another payment for same object).

July 8.—One hundred workmen and 5 carpenters to pass with *Mons* to Norham,

For 4 great trees to *Mons*, weighing 16 stones.

July 9.—To seven wrights for 2½ days, to mak cradill for *Mons*.

- July 9.—To Lord of Hilhouse, for expense of coming hame for *Mons*.
 To stones weight of irne and clath for *Mons*.
- July 19.—To the wif that brocht straberries to the King fra Dri-
 dene, 14s.
- July 20.—To ane wif that brocht cheriis to the King, 4s.
- July 20.—For four gret towis (ropes?) to *Mons*, weyand 16 stans,
 £4 5s 8d.
- July 20.—To bere them to the Abbey for *Mons*.
- July 24.—To pynouris (pioneers) to bere ye tree, to be *Mons* new
 cradil, to her at St. Leonards, where she lay, 4s. 6d.
- July 28.—For 13 stanes of irne to mak graith to *Mons* new cradil, and
 Gavilokkis to go with her, 30s. 4d.
- July 28.—To the Minstralis that playit before *Mons* doune the gait,
 14s.
- July 29.—To 7 wrichtis for twa days, that maid *Mons* cradill, 23s. 4d
 For walking (watching) of *Mons* and uther artillery.
 To Robin Ker to fee workmen to pass with *Mons*.
 For 23lbs. of talloun to *Mons*.
 For $\frac{1}{2}$ gallone of tar to *Mons*.
 For 8 elne of cammus (canvas?) to be *Mons* claits to cover
 her, £9.
 For sewing of it, 4d.
 To twa wrichtis to pass wi *Mons*, for their owke's wages, 32s.
- August 3.—Giffen for wyne to the King at none and evin (noon and
 evening?)
- August 5.—For 2 spikin nales to turs with *Mons*.
 For 6 carriage horses, to *Norem* fra Edinburgh with gun
 stanes that were new maid.
- August 6.—Giffen for 6 hors of carriage to *Norem*, wi ma (more?) gun
 stanes, for ilk hors, 5s.
- August 7.—Giffen to the King to play at the Cartis with the Span-
 ziards at *Norem*, 20 unicorns.
- August 7.—To Robin Ker for the artillery at *Norem* that day we cam
 away, £9 18s.
- August 10.—Giffen to the littill gunner that cam with the King fra
Norem, at the King's command, 18s.
- August 11.—To Schir Thomas Gabreth, for paynting of *Mons* claithe.
 To ane man of Sir Robert Kerris, that brocht titthings
 to the King of the Inglismenn's coming.
- Sept. 18.—To the workmen to bring hame *Mons* and other artillery
 fra Dalkeith.

Ornithological Notes. By GEORGE BOLAM, Berwick-on-Tweed.

HONEY BUZZARD (*Pernis apivorus*).—The bird shot at Longhoughton Low Stead, on the 16th September, 1876, and recorded as a Common Buzzard (*Buteo vulgaris*) in the Club's Proceedings for that year, page 190, I have since had an opportunity of examining, and find that it belongs to this species, a bird perhaps scarcely so rare in the district. It is one of the dark variety, and seemingly a young bird.

RED-BACKED SHRIKE (*Lanius Collurio*).—About the beginning of August, 1879, a boy killed a Red-backed Shrike, with a stone, amongst some willows by the side of the embankment at the south end of the Berwick Railway Bridge. It is in the first year's plumage, and is now preserved in the Museum here. This Shrike is a rare casual visitor to the district, but several examples are recorded as having been captured during the last few years. In Scotland, generally, it appears to be increasing.

HOOPOE (*Upupa Epops*).—One was killed at Eyemouth in the beginning of May, 1879, and sent, for preservation, to a shop in Berwick, where, upon going to see it, I also saw another specimen which had been shot at Holy Island four or five years previously. During the spring of last year there were numerous newspaper reports of the capture of this bird in different parts of the country.

PIED FLYCATCHER (*Muscicapa atricapilla*).—On the 16th of October last, I shot a specimen of this bird in the garden here. When first observed it was busily engaged catching insects, and this it did in exactly the manner of the Spotted Flycatcher, flitting about from branch to branch, or returning to the same position from which it had flown; when sitting too, its likeness to the common species was very marked, in its habit of raising the wings and uttering a short note every now and again.

STOCK DOVE (*Columba Œnas*).—I have to record what is, so far as I am aware, the first authenticated instance of the breeding of this bird in Scotland. On the 20th April, 1879, whilst walking on the steep banks on the north side of the Whitadder, a short way above Hutton Bridge, a Stock Dove flew out some little way below me, and on going down to the place I was agreeably surprised to find its nest, containing two eggs, a good deal

incubated, placed a foot and a half down a rabbit hole; after watching the bird for some time, and satisfying myself that I had not mistaken the species (for escaped tame pigeons breed in the banks in many places in the neighbourhood), I removed the eggs, and they now form an interesting addition to my collection. On re-visiting the place, about six weeks later, namely, on the 3rd June, in company with Mr Muirhead of Paxton, we were not a little astonished to find that the nest contained two fine young ones, almost fully feathered, and we again saw the old bird leave the hole.—At Kylee, in Northumberland, on 16th May of the same year, I took another nest of two eggs, and about the middle of April of the present year a third, on the banks of the Whitadder, near Edrington, also with full complement of eggs. The former of these nests was made in a rabbit hole, the latter in a slight natural depression of the ground, at the bottom of a whin bush and sheltered by long grass, which growing from both above and below, completely concealed it from view. This interesting species is fast becoming a rather common resident in the district, and may now be met with throughout the year, though most plentifully during summer. Its rapid increase may probably be traced as in the case of its congener, the Wood-pigeon, to the ruthless destruction of all so-called “vermin” by the “game-preserved.”

SABINE'S SNIPE (*Scolopax Sabini*).—While walking over a marshy field upon Goswick Farm, in the beginning of February, 1880, I flushed a specimen of this variety; it was wholly of a deep brown colour, and seemed to be a good deal darker than a Woodcock; whilst flying past me, at a distance of perhaps eighty yards, it several times uttered the well-known “scrapi, scrapi,” of the Common Snipe. In a game shop in Berwick, during November of last year, there was exposed for sale, amongst others, a Snipe of an unusually dark hue, being in fact almost midway in colour between Sabine's and the common variety; the whole of the under parts, including the thighs, being blotched over with brown, and the pale margins to the feathers on the upper parts of the body being altogether wanting—unfortunately it had been too long dead, and had received too much injury, to permit of its being preserved.

DUNLIN (*Tringa variabilis*) breeds sparingly on the Cheviot Hills, above Langleyford, seldom more than a single pair

seeming to frequent the same marsh. When the nest or young are approached, the old birds become very tame and run about within a few yards of the intruder, uttering their strange purring cry.

BARTRAM'S SANDPIPER (*Actiturus Bartramius*.—A most beautiful specimen of this rare British bird was shot by Mr Jas. Grey, on the sea-banks at Longhoughton Low Stead, in the county of Northumberland, on the 21st November, 1879, and is now in my collection. It had been in the neighbourhood for about a week before it was killed, and was in the habit of frequenting the long grass or "bents," with which the links at Low Stead are covered. Mr Henry Grey, who had a very good opportunity of observing it while alive, and who spent a considerable time in watching its habits, informs me that it was not at all shy, and when amongst the tall grass lay like a Snipe or Woodcock, allowing him to approach within a few yards of it before rising, and when flushed, after flying for a short distance (seldom more than a hundred yards at a time), it would again drop into the long grass, or alighting on the bare sand would run off to some convenient place of shelter. When surprised in the open, without any covert at hand amongst which to hide, it ran very swiftly, frequently stopping behind a stone, or, after it had got some distance away from him, standing on a slight hillock or other eminence and watching his movements, its tail all the while moving up and down with a peculiar swaying sort of motion, not observable in any of the other Sandpipers. Its note, uttered for the most part when flying, was a shrill piping whistle. Very unfortunately it had not recovered from the autumnal moult, many of the feathers being only partly grown, while others are entirely wanting. On dissection it proved to be a female, and the day after it had been shot, when it came into my possession, weighed $5\frac{1}{2}$ oz., but as it was badly wounded and had bled a good deal, it must when newly dead, have been considerably heavier. Its measurements and description taken before the skin was removed were shortly as follows:—From tip to tip of fully extended wings, $22\frac{1}{4}$ inches; from tip of bill to tip of tail, $12\frac{1}{2}$ inches; middle toe and tarsi together $3\frac{1}{4}$ inches, of which the tarsi measured 2 inches; legs and feet reddish orange in colour, and bare of feathers for about an inch above the knee joint; claws black and strong, and considerably curved. The tail wedge-shaped, the central feathers being $3\frac{1}{4}$ inches in

length. The bill measures—to gape, $1\frac{5}{8}$ inches; from front to tip, $1\frac{2}{8}$ inches, and is slightly turned down towards the end; in colour the upper half of the upper mandible is dark brown, the lower half and the under mandible orange yellow, except at the tip, which is dark brown for about a quarter of an inch in both upper and lower mandible. In colouring and general description of plumage, this specimen agrees pretty closely with the one figured, and described by Mr Morris in his “History of British Birds,” except that in the latter case the outer feather on each side of the tail is said to have been white in ground colour, while in the present instance it is yellowish fawn like the rest of the tail. Professor Newton, to whose kind courtesy I am indebted for some interesting information on the subject, tells me that so far as he is aware “the Bartram’s Sandpiper has, up to the present time, unquestionably occurred three times in England, namely:—One near Warwick, 31st October, 1851, Yarrell Hist. Brit. Birds—Ed. 3, vol. ii., page 633; one near Cambridge, 12th December, 1854, Yarrell, op. cit.—in the collection of Mr J. H. Gurney; one near Falmouth, 13th November, 1865, Bullmore, Zoologist, 1866, page 37; and that Mr Murray Matthew states (Zoologist, 1877, p. 389) that Dr Woodforde’s collection at Taunton contains a specimen said to have been obtained ‘at least thirty years ago,’ on the river Parret, in the parish of Cambwick, Somersetshire; while Mr Morris (Hist. Brit. Birds, vol. iv., p. 296) quoted from the *Illustrated London News*, a statement by a person signing himself ‘N. S. R.’ to the effect that he had shot one at Bigswear, on the Wye, in Gloucestershire, on the 19th January, 1855. As it is not known whether this last has ever been examined by a competent authority, the record can hardly at present be accepted. The species does not appear to have been obtained, as yet, in either Scotland or Ireland.”

RUFF (*Machetes pugnax*).—Occasionally occurs along the coast in autumn. There is a specimen in the Berwick Museum, which was killed in the early part of September, 1879, on Annstead farm, near Beadnell, and I have two others, the one shot at Goswick, on 12th October, 1877, the other purchased from a game shop in Berwick, on 4th September, 1878, and believed to have been killed at the mouth of the river Tweed. Two of these are in the winter plumage, the other is immature. In addition to the instances above mentioned, I have seen several specimens

which were procured on the shore near Boulmer, and a few years ago shot one in that locality. Usually they are seen in company with small parties of Redshanks and other Sandpipers, but the Goswick bird was found on a grass field feeding with a large flock of Peewits and Golden Plovers.

GREEN SANDPIPER (*Totanus ochropus*).—Not unfrequently met with on the coast in autumn, appearing as early as the middle of July. It used regularly to visit the banks of the Till, near Weetwood, being generally found singly or in pairs in spring, and in small parties of from three to six in autumn.

GREY PHALAROPE (*Phalaropus lobatus*).—A person named Reed, living at Goswick, shot an example of this rare casual visitor during the autumn of 1877. When killed it was swimming on a small pool in front of his cottage, and was, he says, very tame.

POMARINE SKUA (*Lestris Pomarinus*).—A flock of Skuas, principally composed of this species, visited us in October, 1879, and a great many were killed. One man, in whose possession I had an opportunity of examining eleven specimens, told me that "he had shot over a score to his own gun," on the 14th of that month, and that several other persons had killed almost as many. The greater number of those procured seem to have been old birds (or at all events not in the *first* plumage, in which stage they are most frequently found on our coast), and were nearly all of the pale variety, indeed I can only hear of two, in the uniform dark brown or black plumage, having been seen or obtained. In a young bird in the first plumage, the central tail feathers are scarcely half-an-inch longer than the others, while in some of the adults these two feathers extend as much as $3\frac{1}{2}$ inches beyond the rest of the tail. Most of the birds obtained here however, as I observe seems to have been the case elsewhere, had these long tail feathers broken. Three examples, shot by Dr Colville Brown the day before, were exhibited at the Berwick meeting of the Club, on the 15th of October last, but were then supposed to be Richardson's Skuas.

BUFFON'S SKUA (*Lestris longicaudus*).—A single example of this Skua was killed at Eyemouth during November last. It is in the usual adult plumage, and has the central feathers 7 inches longer than the rest of the tail. I have not heard of any *Great* or *Richardson's* Skuas being obtained during the past winter, in the district, and the above is the only capture of the Arctic Skua which has

come under my notice, but in other parts of England a few of each seem to have arrived with the flocks of Pomarine Skuas.

FULMAR PETREL (*Procellaria glacialis*).—A person living in Spittal told me that he had shot a Fulmar in the middle of October, 1879, on the sands at Holy Island, and had seen another flying past a day or two afterwards. "The one shot was," he said, "of a creamy white colour all over, and came so close to him that he blew it all to pieces; indeed, believing it, when flying, to be only a Gull, he would not have shot it but for its impudence in coming so near him." The man seemed so sure that he had not mistaken the bird, chiefly identifying it by its peculiar bill, that I have little doubt it was really a Fulmar, and its extreme fearlessness, which at first attracted his attention, would seem to confirm this belief. A specimen was found in December by Mr Grey, on the shore at Low Stead, it had been washed up by the tide, and was when he picked it up partly destroyed by crows. The head, however, which is perfect, has been preserved.

GLAUCOUS GULL (*Larus glaucus*).—Several mature birds of this kind were observed in the river here during the past winter, and one at least was killed. Another, which is now in my collection, was shot near the Berwick Railway Bridge, in December, 1878, by a man then residing in Tweedmouth. Immature birds have been less common than usual this winter; generally they are pretty frequent visitors to our harbour, and may, even at a distance, be easily distinguished from the young of the greater black-backed and other Gulls, by their steady soaring flight.

RED-THROATED DIVER (*Colymbus septentrionalis*).—A specimen in full summer dress, now in the Berwick Museum, was killed at Holy Island, on the 25th October, 1879. Examples in this state of plumage are not uncommon on the coast early in autumn and late in spring, but this one seems to have been unusually late in changing from the summer to the winter plumage.

VELVET SCOTER (*Oidemia fusca*).—A male bird of this species frequented the rocks in the vicinity of Berwick pier throughout the summer of 1879. It was constantly seen by the men engaged at the salmon fishery there, and used often to allow their boat to pass quite close to it without any apparent alarm; never more than one bird was seen at a time, and it remained in the neighbourhood until about the middle of September.

Berwick-on-Tweed, 1st June, 1880.

On supposed Unpublished Verses by Sir Walter Scott. By
JAMES B. KERR, Esq.

IN the midsummer of 1877, a powerfully-built man, near seventy, yet active for his years, called upon me with a friend and asked me to negotiate for him a bill on America. This was at once agreed to, and, during the few minutes conversation that ensued, I detected a strong New York accent, varied with that of lowland Scotch.

I was sufficiently interested to ask him in what part of Scotland he was born. With much good nature, he informed me that for many years he had been a stable lad at the principal inn at Melrose. A beam of pleasure lighted up his face, as he told me that it was part of his duty to receive Sir Walter Scott when at Melrose, and that in giving help to the good Baronet to mount his pony on his return to Abbotsford, whilst many kind words were said to him, they were always accompanied by the gift of a shilling.

His name was James Riddle. In early life he had emigrated, and by steady self-denial, and hard work, had reached a competency. He was then on a visit to his native land. With marked reverence he related that he drove the hearse with four horses, which contained the body of Sir Walter Scott, to the burial place of his ancestors amid the ruins of Dryburgh Abbey.

By a somewhat curious coincidence, in the summer of the following year, 1878, the niece of John Nicholson, who died at Kelso in 1841, called upon me to ask my advice respecting three documents, and some other articles connected with Sir Walter Scott, and belonging to her uncle at the time of his decease. Nicholson was well-known to have been in Sir Walter's household from his boyhood, became afterwards his faithful valet, and Scott's family never mentioned his name without respect and gratitude. There can, therefore, be no doubt as to the documents being authentic and genuine. They were:—

1. Three supposed unpublished verses in Sir Walter Scott's handwriting, perhaps the last he ever wrote. The writing is very feeble.
2. Passport in favour of Sir Walter Scott, signed by Prince de Polignac, the French Ambassador in London, and dated 25th October, 1826. The passport bears Sir Walter's

own signature and address, viz :—Hotel Windsor, Rue de Rivoli, No. 38.

3. Diploma of the Society of Antiquaries of Normandy in favour of Sir Walter Scott, Bart., President of the Royal Society of Edinburgh, and dated A Caen, le 19 Janvier, 1829, and bearing the signature of le President, le Secetaire, le Secretaire adjoint, le Cusorier.

What now follows in this paper refers to the supposed unpublished verses.

The last words written by Sir Walter are said to be in the Guest Book of a small inn in the Tyrol :—

“Sir Walter Scott, for Scotland, 1832.”

In the verses submitted this day to the Club, some gentlemen are of opinion that they were the last ever written by him, and that no clean copy was made of them. I differ from this view, and think that a clean copy was made and presented to the Countess Wollenluss, and that the rough draft in my possession was cast aside, picked up by Nicholson, and preserved with many other relics of Sir Walter.

In Lockhart's “Life” it is mentioned, that, when at Rome, a lady had requested him to do something which was disagreeable to him. He was asked whether he had consented. His answer was “Yes. Why, as I am now good for nothing else, I think it as well to be good natured.” Perhaps this anecdote may refer to the Countess of Wollenluss, and it would be interesting to trace where her family is, and if such a completed document is to be found in their possession.

Assuming that there is no other copy in existence, these verses, as the first rough draft, are, no doubt, a literary curiosity.

The evidence is in them that they were written in Rome in April, 1832; and we know from Lockhart's “Life” to what extreme weakness Scott was reduced. Infirmary had checked his curiosity. He was unable to walk. Only the aspect and society of Rome had for a moment checked his irritation and impatience, and it gave great pain to many of his old friends to see the ravages disease had made upon him, and that it was only when warned with his subject that the light blue eye shot from under the pent-house brow the fire and spirit of other days.

The hand-writing of the verses is feeble in the extreme. There are two mistakes in the spelling—eleven words deleted—

and although the mechanism is defective, yet there is still some of the glow of his early inspiration.

The last sayings and writings of men of genius have an interest for us all, as melancholy as it is lasting. To very many in his own land, and need I not say in other lands also, the abrupt pause in these verses will be touching.

The hand that had so long swept the harp of Caledonia was paralysed in its effort to stir the chords again, and the result is a tone, pure, full, and strong, suddenly checked, whose meaning is for ever lost in the depths of Sir Walter's own soul.

The verses are without place and date, but being a rough draft, this circumstance may account for the want of them. If, as is supposed, they were the last Sir Walter ever wrote, the lines are a striking example of his chivalrous character. If he was at times imprudent, all know how courageous he was, and that his vast intellect and life were sacrificed in his deep desire to be honourable and independent.

In these verses, after the great exertions Sir Walter made, and at the time living in a foreign land, irritated and anxious to get home, and with his whole system rapidly giving way, may not the fine line taken in all its deep humility, in which he compares himself to "a withered Scottish thorn" be considered, amidst all his clear and cheerful, yet delicately sketched and poetically elevated descriptions, if not one of the finest in the English language, at least one of the most simple and best that Scott ever wrote?

VERSES
WRITTEN
BY
THE COUNTESS OF WOLLENLUSS
Reques* (*sic*) a Russian Lady

Lady, they say thy Native land
Unlike this clime of fruit and flowers†
Loves like the Minstrels northern strand
The sterner share of natures powers
Even Beautys (*sic*) powers of Empery
Decay in the decaying bowers‡
Untill (*sic*) even you may set set§ a task
Too heavy for the poets powers

* For "Request"? † Originally, "clime of fruit flowers and." ‡ "sun," obliterated before "bowers." § The word "set" is twice written.

Mortals in vain—so says the Text
 Seek grapes from briars from thistles corn
 Say can fair Wollenlus expect
 Fruit from a withered Scottish thorn
 Time once there was alas but now
 That time returns not now again
 The shades upon the Dial cast
 *
 Proceed but pass not back again
 Yet in this land of lengthened day
 Where april wear (*sic*) the autumns hue†
 Awakened by the genial ray
 Thoughts of past visions strive to blow
 The blood grows‡ warm the nerves expand
 The stiffened fingers take the pen
 And

[In the transcript revised from the original, the i's are not dotted; and there is no punctuation except a comma and a dash. The variations, obliterated by the author, are appended in the Notes.]

Note on the Countess Wolkonsky.

In consequence of a copy of these fragmentary verses having been inserted in the *Bristol Times and Mirror*, Mr Hardy received a communication on the subject from Miss Scarth, the Rectory, Wrington, Somerset, dated October 17, 1879, of which the following is the purport:—

“In the grounds of Villa Wolkonsky, in Rome, is an upright stone erected to Sir Walter Scott’s memory. This inscription is in French. I regret I did not copy it, but the idea was: ‘The Lamp which brightened our winter evenings is now extinguished.’ Countess Wolkonsky is mentioned in ‘A Sister’s Story,’ by Mrs Augustus Craven, in the year 1832, at which time she seems to have gathered round her people of cultivation and refinement.”

Miss Scarth kindly undertook to make inquiries at Rome, and communicated her success in February 26, 1880. “I said that perhaps I should be able to procure a copy of it through a friend now resident there. In a letter received from her this morning she says:—‘The monument, which is a pillar about

* The word “indelibly” is obliterated here. † Originally: “Where April wear autumnal wreath bloom;” and the latest conclusion had ended “the autumns glow.” ‡ Originally “glows.”

three feet high, with a broken top, has on it

‘A Walter Scott
La douce lampe
de nos veillées
s’est éteinte.’

I have put the words in the same order exactly as they are on the pillar.

“I have no doubt in my own mind that the lady who erected this stone, and the one to whom he addressed the verses, was in reality the same person. A. M. E. S.”

The reading of the MS. is certainly the “Countess Wollenluss,” but very probably Sir Walter in his extreme illness and weakness had mistaken, or half forgotten the name. Signóre T. Catalini, the present Italian Secretary to the Court of St. James, thus writes, July 30th, 1880, “There is in Rome, a Villa Wolkonsky near ‘S. Giovanni in Laterano.’ I suppose that the *Countess Wollenluss* was no other than the Countess Wolkonsky, who belonged to a well-known family, I believe of Polish extraction.” S. Catalini promises to make further inquiries.

Ornithological and other Notes, 1879-1880. By Mr ANDREW BROTHERSTON, Shedden Park Road, Kelso.

PEREGRINE FALCON (*Falco peregrinus*), TUNSTALL.—In spite of game-preservers, this fine bird—owing to the difficulty of trapping it—is still keeping its ground on the Borders. An adult female was shot near Leitholm, on May 10th, 1879, when making a swoop at a stuffed wood-pigeon, which was used as a decoy, and another, a young male, was shot by T. Taylor, Esq., at Hendersyde Park, January 15th, 1880.

HOBBY (*Falco subbuteo*), LINN.—A very fine female specimen of this rare and beautiful Falcon was shot at Kelso Bridge, by Mr A. Steel, June 23, 1879. It frequented the district for about a week, during which time it was frequently seen, flying up and down the river, for a short distance above and below the bridge, hawking for insects, in much the same manner as the Swallow; when it came to the bridge, instead of rising above it, it usually darted through one of the arches. A few weeks later, Capt. Taylor told me that he saw another at the same place. As he is

a good ornithologist, and had previously seen the bird in the south, he could scarcely be mistaken. If the first bird had not been shot, it is probable that they might have nested in the adjacent woods of Floors, or Springwood Park.

TUFTED DUCK (*Fuligula cristata*), LEACH.—On August 20th, 1879, I received a *young* female from Mr A. Robertson, which he had shot on Hoselaw Loch. The primaries were not over half grown, so that it was unable to fly, thus showing that in all probability it had been bred at the Loch. I think it will be found that the Tufted Duck nests more frequently in this country than is generally supposed. See also "Proc." vol. viii., 521. This interesting specimen is now in Kelso Museum.

RED-BACKED SHRIKE (*Lanius collurio*), LINN.—Near the end of August, 1879, a specimen was obtained amongst some willows near the Railway Bridge at Tweedmouth. I am not aware of this species having been found so far north previously.

THE LARGE RUSSET VARIETY OF THE COMMON SNIPE.—A specimen (male) of what I take to be this variety—or perhaps distinct species—was shot in Liddesdale, in the beginning of October, 1879. Besides the difference of colour, this was a larger bird than the Common Snipe, which appears to be a characteristic of the Russet Snipe.

POMATORINE SKUA (*Stercorarius pomatorhinus*), TEMM.—On October 11th, 1879, I received two specimens—both males—to preserve for the Kelso Museum, to which institution they were kindly presented by Mr V. Knight, who shot them at Holy Island. About this time there was an extraordinary flight of these birds over the whole country, especially the east coast. The variety of colour in different individuals of this species is remarkable. One of them appears to be a bird of the first year. It is dark brown on the upper parts, the feathers on the back tipped with pale yellowish brown, the under parts barred with dark and light brown, legs pale blue in front, webs and toes black, the middle tail feathers barely half an inch longer than the others. In the older bird the back is more uniformly dark, while white is the prevailing colour below, mixed with blackish brown towards the breast and tail, the centre tail feathers three and a quarter inches longer. Neither had the yellow colour, in the side of the neck. The long tail feathers, in most of the specimens obtained at that time, were either one or both of them

broken, apparently not by shot, but by some other means—probably stormy weather.

LEACH'S PETREL (*Procellaria leucorrhoa*), V.—A specimen of the Fork-tailed Petrel was found dead near Eckford, December 3rd, 1879. Another sea-bird—a Razor-bill—was found near Morebattle, in the middle of March following.

EGYPTIAN GOOSE (*Anser Egyptiacus*), JENYNS.—One of these handsome geese was shot on the Teviot, March 2nd, 1880. From the appearance of one of the wings, which was “pinioned,” it had been a tame bird.

“MASKED” GULL (*Larus capistratus*), FLEM.—On February 5th, 1880, I received an immature male specimen of this interesting gull. It was shot near Berwick by Mr T. Darling. Its habits he observed were solitary, sitting outside of the flocks of the Blackheaded and Common Gulls, and not rising with them when frightened off. It was very fat and in good condition. Weight rather under $8\frac{1}{2}$ oz.; length from bill to end of tail, $14\frac{1}{4}$ in.; length from bill to end of wings, $16\frac{1}{4}$ in.; length of wing from carpal joint, 11 in.; expanse of wings, $35\frac{1}{2}$ in.; bill, tarsi, and toes, same as given by Yarrell (1843), vol. iii. 431. Ornithologists differ as to whether the “Masked” Gull is a distinct species, or merely a small specimen of the Blackheaded Gull (*Larus ridibundus*). Size is not a safe characteristic to go by, as individual specimens of many species of birds vary more in size, than that between the “Masked” and Blackheaded Gulls. The habit of remaining after the others take flight, is interesting. Yarrell quotes a similar instance:—“It was found associating with several of the Blackheaded species, but remained after all its congeners had taken wing.” Prof. Newton, writes regarding this specimen:—“I have long had great doubts whether such a species as the ‘Masked Gull’ exists. All the specimens bearing that name, which have come under my inspection, have certainly been immature Black-headed Gulls—rather smaller in size than the average. Such a bird (in summer plumage) as that figured by Yarrell, I have not met with, and I imagine that the small size of the dark mask must have been due to the stuffer not having pulled the skin back to its proper place after operating upon it. Whether or not a distinct species, I think there is no doubt that this specimen is what was considered by Yarrell, and others, to be the ‘Masked Gull.’” It is now in Berwick Museum.

DEATH'S HEAD MOTH.—I have seen two lately; one was caught at Clifton Park, July 8th, the other in a greenhouse at Kelso, August 5th, 1880.

August 9th, 1880.

Remarks on Wallace's Trench, Selkirkshire. By THOMAS CRAIG-BROWN, Esq., Woodburn, Selkirk.

It may be said that the Trench lies almost direct north and south, stretching from the summit to the base of a steep hill called the "Brown Knowe" on the Ordnance Survey Maps. It is intersected near the lower end by the well-known mountain-road leading from Yarrow over Minchmoor to Tweed. The trench below this road is deep and clearly traceable, but not being certain at what point it lost itself in a ravine, which, if it ever was artificial, is now apparently a natural gully, we did not measure this end. From the Minchmoor road to the top of the hill, Wallace's Trench proper may be said to be 1,600 feet in length, but on nearing the top it deflects a little to the right, and thence forms one side of a rather extensive rectangular enclosure. [By a sketch-plan annexed, the distance from the hill-road upwards to the fortified enclosure is 1,100 feet; then after a slight interruption, there are 200 feet of the trench in the same continuous line, till it bends round and forms the side of the enclosure for other 300 feet. The distance across the enclosure from E. to W. is 100 feet.] The opposite side is a well-marked shallow fosse and rampart, but the Trench itself is deep enough to hide a man on horseback [this I tried myself on a previous visit] for several hundred yards. It is laboriously constructed, the high ramparts on either side, being in many places paved with flat whinstones set on edge. Except that it is in close vicinity to the Catrail, it has nothing to do with it. Comparatively speaking, it is a bit of modern military engineering, as contrasted with that ancient work.

Sea Trout or Common Trout—The Carham Pond Experiments. By MR ANDREW BROTHERSTON.

ON May 17th, 1874, 133 fish, averaging about 7 or 8 inches in length, were selected as good examples of Orange-fins and placed in artificial ponds at Carham. They were examined, weighed and measured at intervals, and on May 2nd, 1879, after five years confinement, 30 of them were weighed, measured, and marked, and returned to the Tweed. One of them was caught near Birgham, on June 4th or 5th and sent to me for preservation. Inserted into the flesh behind the adipose fin, was a silver wire, on which was stamped TWEED IV. I communicated the fact to Mr List, asking particulars about it, when he kindly informed me, that it was one of the fish taken from Carham Pond, on May 21, 1879, at which time it was 12 inches long, and 12 ounces in weight. When recaptured it was $12\frac{1}{4}$ inches long, and weighed $10\frac{3}{4}$ oz. Another, marked TWEED III (also preserved), was captured near the same place, on or about July 17th. It was then $17\frac{1}{2}$ inches long, and weighed $28\frac{1}{2}$ oz. From Mr List, I learned that it was the same length and weight when placed in the Tweed. Both were undoubtedly common Trout! Another, I did not see, but got the wire with which it had been marked (TWEED I) from the person who caught it; he said it was from a common Trout, and being an experienced fisher, it is very probable that he was correct. It was captured below Kelso Bridge on the 5th of July and weighed 2lb, 8oz., length not taken; when liberated it was $18\frac{1}{2}$ inches long, and same weight when recaptured.

There is a paper in the "Proceedings," vol. viii., p. 169, by Mr Huntley, and another (173) by Mr Stirling, on these fish. Both papers lead to the belief that *all* the 133 Orange-fins placed in the ponds on May 17th, 1874, were the young of "Sea Trout." It is very probable that some of them were, but all were not! By referring to these papers it will be seen that all those who examined them, except two—Major Dickens and T. T. Stoddart—were unanimous in the conviction that they had successively exchanged the character of Orange-fins for that of Black-tail and Whitling; the above two gentlemen maintaining that they were Common Yellow or White Trout. In a case of this kind, if experiments are to be of any use, there should be some unmistakeable characteristic, whereby the different species of the *Salmonidæ*,

may be distinguished in their different stages. Colour, spotting, number of fin-rays, and general appearance, are very uncertain marks. The dentition is more satisfactory, although some say otherwise. Excepting hybrids (which cannot be referred with certainty to any of them) it holds good in all that I have examined. The following is condensed from Sir John Richardson's edition of Yarrell's "British Fishes":—

SALMO.—A few teeth on the front of the vomer, but *none* extending backwards along the mesial line.

S. salar, L.—Salmon.

S. eriox, L.—Grey Trout—Bull Trout.

S. salvelinus.—Charr.

FARIO.—Salmons with a *single* row of teeth running along the mesial line of the vomer.

F. argenteus, Val.—*S. trutta*, L.—Salmon Trout.

F. Levenensis (Yarr.)—Lochleven Trout.

SALAR.—Vomer armed with *two* rows of teeth, without the remarkable group in front, such as exists in *Salmo* and *Fario*.

S. Ansonii, Val.—Common Trout.

S. ferox (Yarr.), Great Lake Trout.

There are other differences, such as the form of the gill-covers, &c.

Assuming these characters of the dentition to be correct, the fish figured and described at p. 175 of last volume of the "Proceedings" could not be a Sea Trout (*S. eriox* or *trutta*), but was either a Common Trout or a hybrid, as it had the *double* row of vomerine teeth, whereas the Salmon Trout has *one* row, and the Bull Trout *none* on the mesial line.

Straw Bonds.

Is there anything known of an old practice in money lending, to give a *straw-bond*? This was a number of straws bound together lengthwise, and then divided with a knife; the lender and the borrower each keeping one half. My informant, Mr Robt. Simmons, of Netherton, buried an old man forty years ago, who had had dealings in this way. This man, John Turnbull, was 80 years of age when he died, so that the practice must have existed in the latter part of last century. I have made many enquiries, but Mr Simmons is the only person who seems to be acquainted with the matter now.

Alnwick, 1880.

G. H. THOMPSON.

Obituary Notice of Mr George Shield.

WHEN recently discussing with our learned Secretary the propriety of allowing a niche in the Obituary Notices of the Berwickshire Naturalists' Club for persons, who, though not members, had directly or indirectly, from their scientific acquirements, furnished information to forward our inquiries, I was well pleased to have the acquiescence of one of our ablest members, who accompanied us. Such was, likewise, the view taken by our secretary, from whom I lately had a request to furnish a short biographical notice of the late George Shield of Wooler, long known as an earnest prosecutor of scientific research. I am persuaded that it cannot but be pleasing to our members to preserve from oblivion the names of men, who, though unobtrusive and retiring, had possessed and exercised that faculty for investigation, so essential to the study of nature.

George Shield was born in Tweedmouth, about the year 1804; and his daughter writes, that, from his earliest years, he had been a close student of Natural History. Like many of the Berwick youths at that time, he found his way to London, and obtained employment in the establishment of a tailor. After a few years spent in the metropolis his health seems to have failed, and at 30 years of age we find him married and settled in the country town of Wooler. Though for a few subsequent years engaged in his trade, or in instructing the young men apprenticed to him, he found leisure for an occasional ramble on the shores of the Farne Islands, St. Abb's Head, or among the upland valleys of the Cheviot Hills.

At that time Mr Selby, of Twizel, was engaged in preparing his work on British Ornithology, and the subject of our memoir had occasional interviews with that distinguished naturalist, from whom he must have acquired that impulse, which induced him, at the age of 40, to retire from his profession and devote his time nearly exclusively to science. Being in the prime of life he was able to undertake long walks and excursions, during which he captured many rare specimens, which he carefully stuffed or etched upon steel. This art he acquired by perseverance, having had no preliminary instruction, even in sketching, which will astonish those who have seen his life-like engraving of the "Rough-legged Buzzard." In this way he gradually elaborated plates, which

were fitted to illustrate a work on the scale of that of Audubon or Selby. The last-named ornithologist had, however, just completed his standard work on British Ornithology, and publishers were unwilling to speculate upon another work on so large and expensive a scale. I remember, when a boy, visiting the studio of George Shield, with a few London friends of my father, and listening to their suggestions as to publishing; and offers of assistance towards carrying out his object. The work, as at first intended, was perhaps wisely discontinued; but in many a Northumbrian house is to be found, one, at least, of the large preparatory plates. They are remarkable for their truth to nature, and the dash and liveliness of the attitudes characteristic of their subjects. This knowledge had been acquired by direct study of the habits of living specimens, with which his house and garden were often filled. A few specimens which I was fortunate in having stuffed by him, I esteem as equal to anything I have seen in the largest collections of the old or new world. George Shield was frequently on the Farne Islands in search of specimens, and had formed the acquaintance of the Darling family. During her last illness, poor Grace, the heroic daughter of the Darlings, found an asylum for change of air under their friend's roof at Wooler, where her mild and unassuming figure might have been seen in the Parish Church of a Sunday. A decline removed her while yet young, but the fragrance of her hazardous adventure of loving benevolence has not perished; but is the watchword of the fishing-boat, and a treasure in the bosom of the hardy mariner as he steers past the solitary Farne Isles, as the waves rise.

When a lad, I frequently visited Mr Shield's room, where I listened with all the ardour of youth to the narrative of his adventures.* My nerves would quiver as he described himself suspended by many fathoms of fishing lines over the rocks at Tantallon, in quest of sea-birds' eggs, or the young of the Peregrine or Osprey. The danger seemed nothing compared with the honour of overcoming it in the cause of science; and an excursion was soon arranged, with men and ropes, to the rocky side of Cheviot.

There, suspended over the Bizzle Cliff, I endeavoured to procure

* [Mr Shield, I am told, was a good narrator, and enchained as by a spell, a youthful audience.—J. H.]

one specimen of the Peregrine's eggs; but alas! the nest had been previously robbed by a ruthless town collector, who, for a number of seasons had carried off the eggs or young of these handsome, but now rare birds. Mr Shield had acquired a knowledge of science generally, and I am informed had delivered numerous lectures to the Mechanics' Institute of Wooler, on such subjects as "Astronomy," "Electricity," "Races of Men," and "Geology." [He communicated several hints to his friend, Mr Mackay Wilson, which are embodied in his well-known "Tales of the Borders."]

For some time he was engaged in writing an "Exposition of the Prophecies of Daniel and St. John," but none of his papers have been published. This work, regarding which I have frequently talked with him, showed much ingenuity and research, but might not agree with the views of all who have made that subject a study.

George Shield was possessed of a refined taste, gentle manner, and a most obliging disposition. His health, which was never robust, became impaired towards the end of his life-time by frequent attacks of rheumatism, the result of his early adventures; but a severe attack of cold, during which he superintended the decorations for a large public dinner in Wooler, seems to have accelerated his end. He died on the 29th January last, in the 76th year of his age. His keen and suggestive intellect seemed to me admirably adapted for chemical investigation, in which branch of science I have no doubt, he would have attained to eminence; but his greatest effort was in the line of ornithology, for which too much had just been accomplished, by an able and more wealthy contemporary, to leave him a chance of authorship.

His six plates are the size of life, and are—1. The Peregrine Falcon; 2. The Water Hens; 3. The Rough-legged Buzzard; 4. The Titmouse and Finches; 5. The Cormorant; 6. Black-birds and Thrush.

G. P. H.

17th July, 1880.

Obituary Notices. By JAMES HARDY.

MR WILLIAM RICHARDSON, ALNWICK.

WILLIAM RICHARDSON was born at the village of Hebburn, near Chillingham, August 31st, 1797. At present Hebburn, situated in an angle of the steep public road that leads over a natural pass between the roots of Ras-Castle and Hebburn hills, skirting the Earl of Tankerville's Park wall, consists of a double row of humble cottages, one on each side of the highway, but not exactly opposite each other. Some of them have flower-plots in front. Higher up, is a gushing spring of limpid water, by the way-side, most refreshing to the traveller. The place had been much more populous, as is indicated by the large ash trees on the right hand as one ascends, that once sheltered the garden-plots, when occupied by the retainers of the Hebburn family, the ruins of whose old tower stand on the right, within the precincts of the deer-park. At the period referred to, the proprietrix of the Hebburn estate, was Mrs Brudenell, the heiress of the old family of Hebburn (which dated from the period of King John), who, on coming of age, had made an unfortunate marriage with the Rev. Edward Brudenell, an unworthy dissipated man, of noble birth, who spent her means and neglected her, and from whom she was obliged to separate with a very restricted maintenance. Relieved by his death in 1804, this once gay and light-hearted lady entered once more on her hereditary estates, and came back at the age of 66—"a shattered, feeble, old woman"—to the hills and ruined castle of her ancestors. She died at Tadcaster, Dec., 1806, and out of gratitude left her landed property to her friend, Mrs Fletcher, wife of Mr Archibald Fletcher, an eminent Whig lawyer, and a member of the famous literary society of Edinburgh of a bygone period. The Fletchers spent part of the summer and autumn of 1807 at Hebburn House. Mrs Fletcher speaks of it as situated "at the summit of a bleak, bare hill. It was built by the late Mr Brudenell, who pulled down an old baronial castle which time had spared, and fixed upon precisely the only part of the estate which affords a prospect utterly devoid of picturesque beauty." Mrs Fletcher describes the condition of the village of Hebburn, when William Richardson would be ten years old, and he probably participated in the picture here presented.

"The village of Hebburn is a short mile from us. There has not been a school there in the memory of man. Last Sunday (July, 1807) we assembled about twenty children in the remains of the old castle, read a little appropriate address to them, and prevailed on them to accompany us to church, about a mile distant from the village. They had never been in any place of worship. Their parents were chiefly Dissenters, and their chapels and tabernacles were many miles distant, too far for the children to travel barefooted; so they were suffered to run wild on Sunday. I was much pleased with the liberality of the parents; there was no bigotry amongst them, for, though of many different persuasions, they all willingly sent their children to accompany us to the nearest place of worship. The children on their part were delighted; most of them could read; and we agreed that 'the Sermon on the Mount' was good for us all." The Fletchers appear not to have sufficiently appreciated their romantic Northumbrian property, which was purchased in 1817 by the Earl of Tankerville, whose estate of Chillingham adjoined it, and who added the wild part of Hebburn to his range for the celebrated wild cattle.*

Long ere this latter event, William Richardson had left his paternal residence to commence the business of life, having served his apprenticeship to the trade of a saddler. Whether in his youth he culled the wild flowers from Hebburn Wood, and was then struck with their singularities, or whether the images of their beauties remained as an abiding joy in his memory in after years, to influence him in the studies of his maturity, we know not. In the rough rocky bottom sheltered by the native oaks, the rare *Tridentalis Europæa*, springs up in all its grace and in full luxuriance; and *Oxalis* is still more profuse in its tender verdure, and offers here in its flowering plots, a pink variety with purple veins, which is a charming addition to the flower border. A peculiar form of *Melampyrum pratense*, and the rosy-bloomed *Vaccinium Vitis-Idæa*, are distributed among the purple heather on the heights that margin the wide brown craggy moors behind; and also ornament the bilberry-clad summit of Ras Castle, that most conspicuous land-mark from districts far away. He would know about them afterwards, but it was not here, that he was to commence his first searches after wild plants.

* Autobiography of Mrs Fletcher, pp. 96, 97, 93, etc.

His daughter, Mrs Gibb, says, "he was always fond of flowers, and took great pleasure in gardening, but it was not till the year 1846, that he commenced the study of Botany, which he pursued, I may say, until his death."

Mrs Gibb's narrative enables me to continue the story of this amiable and worthy man. "The pleasure which he derived from Botany must have been very great; for his business took up most of his time, and he was seldom absent from his place in the shop. He was, however, happily situated for carrying on his botanical studies, the surrounding country being rich in plants. Early and late he prosecuted his search for them, and every public holiday was specially devoted to the procuring of those specimens that were not within immediate walking distance. Kyloe Crag, Cheviot Hills, and Holy Island were periodically visited by him; and many other places of less note, but not less cherished by him, from furnishing the habitats of certain plants not seen elsewhere. He was an excellent walker, and did not fail to tax himself to the very utmost; always arranging the plants for botanical specimens, that same evening, although often very tired. He was most particular about leaving the roots of rare plants, lest they should become extinct; and I have often heard him speak with sorrow at what he called the 'rapacity' of collectors. He did not think those were true botanists, that would, in thorough wantonness, carry away roots of the rarer species, where it could be avoided."

Mr Richardson's careful surveys resulted in the finding of a variety of new localities for several rare species, which brought him several correspondents. From their communications I shall select a few notices either illustrative of the local Flora, or that afford passing glimpses of Mr Richardson as a man.

Mr Richardson was the discoverer of *Allium Schcenoprasum*, or Chives, growing in a wild state on the back of Spindleston Hill. With this Dr Johnston of Berwick was greatly pleased, and there are three notes preserved, two of dates June 25th and one on the 28th, probably in the year 1852, fixing a meeting with Mr R. to visit the station. Dr J. writes: "The plants can only be *Allium Schcenoprasum*, of which, however, I never saw a native specimen. Although my time is uncertain and not at command, yet I may endeavour to find a few hours to go in search of it." Let us hope that this pilgrimage was accomplished with mutual satisfaction.

Mr Richardson's correspondence in connection with the Thirsk Botanical Exchange Club, had commenced with Mr J. G. Baker, F.L.S., in 1861, and there are a series of notes down to 1872. In 1864 and 1866, we find him contributing notes of localities of rare species to Messrs Baker and Tate's "New Flora of Northumberland and Durham," published by the Tyneside Naturalists' Field Club. The following notes form a sort of Adversaria on some of the entries in that useful and painstaking work.

Among the plants forwarded in 1864, there were two species of *Thalictrum* from Kyloe. "The smaller," Mr Baker writes, "is evidently the inland rupestral form of *T. minus* called *calcareum* by Jordan, and *montanum* by Wallroth; the large one, although there is no fruit on your example, I think we are quite safe in referring to *T. flexuosum*." See "New Flora," &c., p. 114.

In 1863, Mr R. finds "a form of *Barbarea vulgaris* with upper leaves resembling those of *B. stricta*; but in true *stricta*, the pods are rigid and adpressed to the stem."

In 1864, *Alyssum calycinum*, an alien, was gathered by Mr R. "on the Railway side south of Warkworth Station;" and in the same year *Polystichum angulare* was gathered in Cauledge woods near Alnwick.

Sept. 10th, 1865, Mr Baker mentions: "There are fine specimens of *Hymenophyllum Wilsoni* in Winch's Herbarium from Bickerton, near Rothbury, gathered by Sir Walter Trevelyan, who told me he had got it again lately in the same place." Mr R. had obtained local specimens somewhere to send to his friends.

On Aug. 9, and Dec. 20, 1865, Mr Baker informs him that he had found *Agrimonia odorata* near the ruins of Staward Peel. Although he calls Mr R's attention to it, he appears never to have found it at Kyloe Crag, where it had been gathered by Professor Oliver. *Hieracium pallidum*, which Mr R. had got on the basalt at Kyloe and Spindleston, had made itself quite at home on the rockery at Thirsk, and satisfied Mr Baker with its identity with the Teesdale plant.

On specimens of *Potentilla alpestris* from Spindleston, June 12th, 1867, Mr Baker observes, "I do not see any material differences between them and the Teesdale and Craven *alpestris*. Undoubtedly it and *verna* come very close to one another."

In 1865, Mr Richardson's attention is directed by the same diligent investigator to the *Rubi*; the results were that of the

specimens assembled, the following were some of the local forms : 1. *rudis* ? 2. *rhamnifolius* grown in the shade ; 3, *radula* ; 4. *corylifolius* ; 5. *umbrosus* ; 6. *cæsius*. Again a packet of *Rubi* from Belford produced *radula* and *umbrosus* ; and one from Buston included *diversifolius*, *corylifolius*, *radula*, and *macrophyllus*.

About 1868, Mr Richardson sent a *Rosa* from the neighbourhood of Alnwick, which Mr Baker pronounced to be *R. systyla*, which was not known with certainty before in England, northward of Worcestershire ; and subsequently Dr Henry Trimen confirmed the accuracy of this determination. Somewhat later, he sent what was considered to be *R. micrantha*, which was " new to Northumberland ; the most northern station in Britain, being Sandsend near Whitby." It is not included in the " New Flora."

On the 28th July, 1869, he sent to Dr Trimen, *Rosa Forsteri* of Smith (*R. urbica* of Leman), a sub-species of *R. canina* ; and also the form called *R. sarmentacea* of Woods (*R. dumalis* of Bechstein).

Lastly, in 1872, he communicates to Mr Baker and Dr Trimen his grand discovery of *Psamma Baltica* on Ross links, and Mr Baker congratulates him, Aug. 8 : " I am very glad that the discovery of such a very decided novelty has fallen to Mr Richardson ;" and Dr Trimen hailed " the very interesting and important discovery."

Mr Richardson's other plants are recorded in the " New Flora ;" in Mr Tate's " History of Alnwick ;" and in his own papers in Irvine's " Phytologist."

Mr Richardson was very careful in drying his plants, and those with whom he exchanged compliment him on their being, as one expressed it, " perfect" as specimens, the examination of them as he phrases it making " one's mouth water." He was also liberal in distributing his duplicates, without expectation of return. The Rev. Wood Robert says that Mr Richardson " did indeed act on the principle—never to forget to return a benefit—and I think in some instances you restore fourfold." He was kind and conciliatory to young beginners. One, in the fullness of his heart, informs him that " he is very fond of plants," and has got together nearly four hundred British species, kept in portfolios of his own construction. He offers Mr R. a living plant of *Angelica Archangelica* or *Heracleum giganteum*, which is quite in the grandiose style of a boy's gratitude. Bazaar contributors also apply to him, one lady being sure that with his

aid she could get up two dried collections of British ferns, to sell at £1 each set, for the benefit of a "church restoration fund." No wonder how the stock of British ferns is rapidly diminishing.

Mr Richardson's kindly disposition was manifested on hearing of the misfortunes of his fellow naturalists in a variety of circumstances. He could at least speak a comforting word in season, to refresh or uphold the downcast. The following quotation in reference to some such occasion, is from a letter of Mr John Sim, dated Perth, 16th June, 1872. "I return you my warmest thanks for your very generous and friendly epistle, which this morning I had the pleasure to receive. I very much admire the simple, earnest, unaffected style in which it is written; the words evidently emanated from the pen of one who possesses an amiable and benevolent spirit; a man of noble soul and large heart, who loves all mankind—the world wide—and rejoices in the happiness and welfare of our common humanity. Would to God we had more of such men; a new and auspicious era would dawn upon our sin-curst earth, and our fair and fertile globe would soon again be 'Paradise restored.'"

In 1866, Mr Richardson sustained a great domestic affliction in the death of a beloved daughter, which he bore, although feeling keenly, with Christian fortitude. In 1868, he experienced another deprivation in the loss by consumption of his promising nephew, William Richardson, jun. This youth stayed in Mr Richardson's house, while learning to be a schoolmaster, and his uncle taught him botany. His nephew was a great help to him in drying plants, arranging his exchanges, and doing part of his correspondence. He contributed a pleasing notice of Ratcheugh Crag and its Plants to the new series of the "*Phytologist*," vol. v., pp. 97-100 (1861). Had he been spared, and given his attention to Botany, he might have become a very successful observer.

Mr Richardson's modesty prevented him from contributing to any extent to Botanical periodicals, and when he did venture, he appended only his initials, to what the editor speaking of the first, calls "one of the most important contributions I have had for many a month." I am only acquainted with the articles which he furnished to the "*Phytologist*," conducted by his friend and correspondent, the late Mr Alexander Irvine. They are: 1. Rare Plants near Spindleston, Northumberland, *Phytol.*

v., pp. 79-81 (1861); 2. Botany of Hulne Park, Ib. v., pp. 193-198 (1861). In this, what is called *Corydalis solida* proved to be a foreign species of *Dielytra*, either *formosa* or *Canadensis*; 3. On the plants of Holy Island, Ib. vi., pp. 10-15 (1862). Dr Henry Trimen's description of *Psamma Baltica* appeared with a plate in the "Journal of Botany," 1872; and is transferred with some additional remarks from a different source to the Club's Proceedings, vol. vi., pp. 441-443.

He had become connected with the Thirsk Botanical Exchange Club in 1861, and in 1864 was elected a corresponding member of the Society of Amateur Botanists (Science Gossip), 192 Piccadilly, W. It was not till Sept. 29th, 1875, that he joined the Berwickshire Naturalists' Club, but he had previously attended many of the meetings, with great zest. There was a meeting at Kyoie Crags, on May 25th, 1870, at which he was present; and to it the following extract from a letter of the Rev. Wood Robert, Westward vicarage, Wigton, refers. "What a treat your excursion with the Berwickshire Naturalists' Club must have been. Did it not revive some of your old enthusiasm, and raise again some of that feeling and spirit, by which I well recollect you were once described as that 'energetic Botanist, our correspondent from Alnwick, Mr Richardson.'"

Mr Richardson's extensive Herbarium, amassed from a great variety of sources, was bequeathed to his grandson, the son of our active corresponding member, Mr T. H. Gibb, Alnwick.

I shall now resume Mrs Gibb's narrative. "I think Holy Island would be amongst the last places he visited. The August holiday was always devoted to that place. Sometimes he staid over the night. I need scarcely say, that it was at that time he discovered the *Psamma Baltica*. You cannot conceive what pleasure that gave him. As you know he was a man of few words, and shrank from his name being brought forward; but he could not conceal from us how very pleased he was, when it was declared to be a real discovery.

"Of late years he was greatly failed. I mean old age crept on his physical frame—but he was, as far as his mind was concerned, as young as ever. He took the same interest in his botanic garden, especially his roses, as ever he did; and in passing events, and people and things surrounding him. He never was an old man in the true sense; I never thought him old. He

read with great pleasure Smiles' book on Edwards the Naturalist; it just suited him. The wonderful perseverance and self-denial of that man were just exactly what he liked and believed in; being of opinion that with persistent application, a man could attain to be master of any branch of art and study; quite as much so as a man with natural talent or aptitude for the same."

Mr Richardson died at Alnwick, April 18th, 1879, in his 80th year; leaving with his relatives at the close, the consolatory reflection, "that he is now enjoying that glorious hereafter for which he lived."

The Alnwick Scientific and Mechanical Institution at their general meeting, Dec. 2, 1879, passed the following resolution:

"By the death of Mr William Richardson we have lost an old and valued member. He was one of the last of that small band of pioneers who strove so nobly in the early years of this Society to give life, energy, and stability to its undertakings. As a student, and afterwards as a teacher, he attended some of the earliest classes taught in connection with this Institution; and the advantages that he derived from such agencies were so great that he was ever afterwards anxious that others should participate in the same privileges. For years he served on the Committee, and in that capacity he was acting at the time of his death. His wise counsel and conciliatory manner, combined with great business experience, always commanded among those with whom he acted, the utmost respect. As Mr Richardson advanced in years, it must have been a source of no ordinary gratification to him, to see the labours of this Society attended with such beneficial results."

JAMES MAIDMENT, ESQ., ADVOCATE.

WHILE the Club in its original constitution embraced both the studies of Natural Science and Antiquities, much more prominence has been allotted in its obituary notices to those of its distinguished members who were Naturalists, than to those who were equally profound Antiquarians. As an instance of such partiality, we have passed by Sir James Simpson, as also some others; but fortunately a studious life is often a long one, and we have not many such deprivations to record. One eminent man we have recently lost, one known to very few among us, who probably never attended a Club meeting, never with buoyant

companions traversed the hill-sides, looked out to sea from the giddy cliffs, pondered by the lone barren beaches, tracked the romantic streams, or penetrated the remote glens and deep woodland retreats of the Border-land; never penned a paper for the "Proceedings;" never picked up one of the beautiful wild flowers of the Border, nor listened charmed to the song of its free-throated warblers, hunted after its insects, or sought out any other of the varied components of its Fauna; never hammered a rock, exposed a fossil, or sketched a section; never even viewed its ruinous castles, and half obliterated encampments, or the luxurious environments of its modern mansions; or traced on wild moors and craggy wastes the remains of its ancient forgotten people; was neither meteorologically nor hygrometrically observant; never even thought that it was a matter of obligation in a member to perform any of all these open or private manifestations of interest in the Club's aims and objects; but with quiet and unostentatious approval adhered to us for a long series of years, contented to observe that at least some others were busy, bringing free-will and not tasked offerings, and that the results although not particularly brilliant or new, had at least a certain value; and that as the years advanced the institution was still maintained in good heart, and in favourable reputation. This was Mr James Maidment, the friend of Sir Walter Scott, Charles Kirkpatrick Sharpe, Robert Pitcairn, John Riddell, and others of a bygone period, famous as literary devotees, lovers of rare books, or proficients in genealogical inquiries.

The son of a London solicitor, Mr Maidment was born there towards the close of the last century, and, like his father, chose the law as his profession; having, on the adoption of Edinburgh as a residence, become a member of the Faculty of Advocates. It was, however, as an antiquarian *litterateur* that he was best known; and it was probably in connection with such pursuits that he formed a friendship with Sir Walter Scott, which was only severed by the novelist's death.

Mr Maidment, at the time of his death, was the last remaining of the 25 members who originally constituted the Bannatyne Club in the year 1823. He was also an active participant in the Abbotsford Club, established like the Bannatyne, for the publication of literary rarities; and he contributed to the works of the Spottiswoode Society.

Mr Maidment's publications were very numerous, and only printed in small numbers of copies; almost every one of them is now out of print. Nearly all his works were published through the medium of Mr John Stevenson, antiquarian bookseller,—Sir Walter Scott's "True Jock"—or his son, Mr Thomas G. Stevenson. Mr Stevenson drew up and issued in the year 1859, "A Bibliographical List of the Various Publications by James Maidment, advocate, Edinburgh, from the year 1817 to 1859, inclusive," in royal octavo. This has, without acknowledgment, been transferred to the Appendix to "Lowndes' Manual"—see Bohn's Edition. As Mr Maidment's life is written in his works, I have obtained Mr Stevenson's consent to reproduce the list, with subsequent additions and particulars from his personal acquaintance with his writings. Two works, however, are excepted, on the authority of Mr W. H. Logan, as being his productions, and not Mr Maidment's, viz.:—No. 24 of Lowndes' List, "West Digges' Correspondence with Mrs Ward;" and No. 36, "Memoir of Archibald Maclaren, Dramatist."

Mr Maidment was a contributor to "Notes and Queries." In one of his notices in particular, I observed that both he and Mr Logan had confounded Burnmouth, a locality in the ancient Ettrick Forest—an old mustering ground for Scottish armies—with the modern fishing hamlet of Burnmouth, near Berwick. The inference deduced from this mistake—that the country between Burnmouth and Berwick was formerly covered with wood, has no foundation whatever. Mr Maidment's books and collections of papers were much enriched by annotations drawn from the store-house of his vast experience.

Mr Maidment was considered as an authority on genealogical matters. Among other fruits of his labours in this field were "Reports of Claims preferred to the House of Lords in the cases of Cassilis, Sutherland, Spynie, and Glencairn Peerages." More recently he prepared a statement of the case of Mr Goodeve Erskine, in connection with that gentleman's claim to the Earldom of Mar. In the Annandale Peerage case, now being litigated, the evidence of Mr Maidment, and of Dr David Laing, both disenabled by the infirmities of age from appearing personally, was taken by commission at their own residences.

In the same line of studies, he had just finished before his death a curious volume, undertaken at the instigation of the Earl

of Crawford and Balcarres, being the first of *Notices of Peerage Cases*, in 4to, forming the contents of the first seven volumes of a large collection of *Peerage Cases*, which he had gathered—the entire collection now passing into the hands of his Lordship. There are only 100 copies of this book printed at the private expense of the Earl. Mr Maidment never finished his preface, for which, during his illness, he had taken notes.

Mr Maidment became a member of the *Berwickshire Naturalists' Club*, June 28, 1859, having continued in the membership for twenty years.

About 1848, or subsequently, his mother occupied the mansion house of Tweedhill, and Mr Maidment often resided there. He appears then to have delighted in private and theatrical representations. There is a short account by him of Hutton hall, on the Whitadder, which is perhaps the sole written memorial of his Border visits. It refers to an early charter of resignation and re-investment in the lands of "Hutton-hawe," to George Ker of Samuelston, from William Earl of Douglas, &c., dated at Edinburgh, 11th Jan. 1451, in which there is a very minute specification of heirs of entail, down to eight degrees of substitutionaries. Mr Charles Watson, Dunse, acquired the charter at the sale of Mr Maidment's library, and from Mr M's remarks accompanying it I may for its local interest preserve the following extract:—

"The present house of Hutton-hall was not erected till a later period. It is now falling to ruin, but at one time must have been a fine baronial residence. Some of the trees which are adjacent, are evidently of considerable antiquity, and may rival those at Bemerside, the seat of the family "De Haga," which are celebrated for their beauty. Notwithstanding the careful entail and the number of substitutes, Hutton-hall long since passed from the Kers. Some 40 or 50 years ago the estate belonged to one of the Johnstones—a well-known border family. Upon this gentleman's death it was sold. Since then, the mansion-house, not being inhabited, has been permitted to go to ruin, and one portion of it has fallen in."

Mr Maidment died at his residence, 25, Royal Circus, Edinburgh, on the evening of the 24th October, 1879, and his remains were interred in the Dean Cemetery.

His extensive library of rare books, containing as catalogued 5059 works, with a miscellaneous assortment over and above, was sold in May, 1880, by auction, in Edinburgh; fifteen days being occupied in its disposal. Large prices were obtained; the proceeds of the fourteen days for the catalogued series being

£4,499 1s 6d. The following account of the nature of this valuable collection is from the *Scotsman* of April 28th, 1880. "The late Mr James Maidment, advocate, as may be gathered from a very cursory examination of this collection, was an enthusiastic bibliographer; and there are few volumes in his library which do not in one way or other bear the impress of his individuality. His acquaintance with many of the most eminent *litterateurs* of his day enabled him to collect with facility not only works of great value and interest, but numerous data and reminiscences relating to these works or their authors, which, embodied in a permanent form in the books, invest the collection with an additional interest. The 5059 works which he has brought together in the course of over half a century's collecting, and which are now to be dispersed under the hammer of the auctioneer, comprise histories and treatises on a great variety of subjects. Not a few of these date from the 15th, 16th, and 17th centuries, and are as valuable as they are scarce. An important feature is the collection of works relating to the drama and dramatic literature; a department in which Mr Maidment took an especial interest, and in which, perhaps, he was most widely known to the literary world. These number close upon 1,000. There are also numerous historical and statistical works, including 100 volumes entitled 'Scottish Topographical Collections;' a great variety of biographical compilations and relics, among which are collections of holograph letters by Sir Walter Scott and other distinguished men; many rare old ballads and fugitive publications; privately printed works by J. Payne Collier, David Laing, and others; publications of the Abbotsford and other Clubs; and sets of privately printed works, edited by Mr Maidment. The books are in excellent condition, indeed, in rebinding and renovating the most ancient specimens, the collector has given some indication of how much he cherished them, thinking, doubtless, with Charles Lamb, that however flimsily current literature might be clothed, no binding was too good or substantial for those relics of the past. Perhaps the most remarkable, and to some extent unique, feature of the collection, consists in the notes in the collector's handwriting, and newspaper cuttings, which have been inserted more or less freely in a large proportion of the works. These relate principally to the authors, or furnish some additional information on the subjects under treatment."

Bibliographical List of the Publications of James Maidment, Esq.

1. Prymerose (David), Scotland's Complaint upon the death of our late Sovereigne King James, of most happie memorie. (In verse, dedicated to John, Earle of Marre). Reprinted from the edition of 1625, printed by John Wreittoun, 1817, 4to. 10 copies printed. See Bibliographer's Manual, p. 1973.
2. Raid of Ruthven.—Ane declaration of the just and necessar causis, moving vs of the nobillitie of Scotland and vthers ye Kings Majesteis faithfvl svbjectis, to repair to his Hienes presence and to remane with him, &c., &c. ¶ Derectit from Striuling with speciall command & licence to be prentit: Anno 1582.—with preface and notes. 1822, small 8vo. 45 copies printed and 2 on vellum. See Bibliographer's Manual, p. 2210.
3. Two ancient Ballads—Robin Hood's Courtship with Jack Cade's daughter; and the Frieris' Tragedy. Aberdeen: Published and sold by William Robertson. 1822, 8vo., pp. 16. 12 copies printed. "The place of publication was purposely falsified; and the Ballads were printed for the purpose of testing the knowledge of a literary friend who asserted that he never could be imposed upon by a fictitious ballad."
4. Nugae Derelictae quas collegerunt J. M. et R. P. (A collection of eighteen Tracts, privately printed, at various times, by James Maidment, Advocate, and Robert Pitcairn, W.S.) 1822, royal 8vo. Only six complete sets of these tracts are now supposed to exist. There is a set in the Grenville Library, British Museum, and another in the library of Lord Houghton. Contents:—1. Inventory of Arbuthnot—Title-deeds from 1206 to 1483. 2. Carta Comes de Buchan to Roberto de Warderobe. 3. Confirmatio Alexandri Regis. 4. Letters of Pardon by Edward III. to Cecil Ridgeway, 1358. 5. Appendix. 6. Charter by Magistrates of Edinburgh to Robert de Preston, 1454. 7. Procuratory to Rosse of the Hawkhead, 1466. 8. Battayle of Flodden. 9. Appendix. 10. Geir of the Abbacie of Lindoris, 1513. 11. Heraldic Verses, 1565. 12. Inventor of Gudes of Dame Elizabeth Fleming. 13. Resignation by Lord Binning, 1614. 14. Lord Dunkeld's Prophecy. 15. Dying words of Haxton of Rathillet. 16. Excerpt from

- Inventory of Crown Donations. 17. Memoir of Robert, fifth Baron Balfour of Burleigh. 18. Appendix.
5. *A North Countrie Garland.* (A collection of ancient Ballads, never before printed.) 1824, 12mo. 30 copies printed.
 6. *Excerpta Scotica.*—(A collection of twenty-nine short pieces, illustrative of Scottish affairs) 1828, 8vo.
 7. *Pittilloch's (Robert) Tracts, Legal and Historical, 1659-1689.* Reprinted from the Original Editions with an Introductory notice. 1827, small 4to. 40 copies printed on small, and 4 on large paper. Small 4to. See Bibliographer's Manual, p. 1875.
 8. *Scottish Pasquils or Lampoons, now first printed from the original manuscripts with Illustrative Notices and Notes.* 1827-1828. 3 vols. 12mo. 60 copies printed on small and 15 on large paper. Small 4to. Principally directed against the opponents of the House of Stuart.
 9. *Reliquiae Scotiae: Scottish Remains in prose and verse from original manuscripts and scarce tracts.* 1828, 8vo. 14 copies printed, and 2 on thick paper. In this collection will be found two abusive letters from John Pinkerton, to George Paton the antiquary, including two bonds of Manrent—various poetical scraps from original MSS.—An account of the witches of Kelerman, &c.
 10. *Templaria: Papers relative to the history, privileges and possessions of the Scottish Knights Templars, and their successors the Knights of St. John of Jerusalem, &c.* (Four parts). 1828-1829, small 4to. 24 copies printed on small and 2 on large paper.
 11. *Gascoigne (George), the Wyll of the Deuill with his ten detestable commaundmentes, directed to his obedient and accursed children, &c.* Reprinted with a prefatory notice. 1828, 18mo. 40 copies printed and 2 on vellum. See Bibliographer's Manual, p. 867.
 12. *A Banquet of Dainties for Strong Stomachs.* (A collection of Scottish Satirical Poems from Robert Myln's MSS., and other sources prior to 1720). 1820, 18mo. A joint publication of C. K. Sharpe and J. Maidment.
 13. *Memorials of the Family of Row, viz.—The Redshankes Sermon: preached at Saint Giles' Church, Edinburgh, by a Highland minister.—A cupp of Bon Accord or preaching by*

- Mr James Row, sometyne minister at Strowan, preacht by him at Edinburgh, in St. Geiles' Church, with an Introductory Notice, Notes, &c. 1828, small 4to. 40 copies printed on small and 12 on large paper. See Bibliographer's Manual, p. 2135.
14. Davidson's (Rev. John) Poetical Remains, 1513-1595, now for the first time collected, with a Biographical Account of the author, and various illustrative papers. 1829, small 8vo. 40 copies printed.
 15. Ritson (Joseph), Letters to George Paton, to which is added a critique by John Pinkerton upon "Ritson's Scottish Songs," with a Preface and Notes. 1829, small 8vo. 100 copies printed. See Bibliographer's Manual, p. 2100.
 16. *Nugae Scotiae*: (A collection of twenty-two separate brochures) Miscellaneous Papers Illustrative of Scottish Affairs, 1535-1781. 1829, 8vo. 60 copies printed.
 17. Private Letters, now first printed from the original MSS., 1694-1732. 1829, small 8vo. 50 copies printed on small paper and 12 on thick.
 18. Letters from Bishop Percy, John Callendar of Craigforth, David Herd, and others, to George Paton; with an Appendix of Illustrative matter, Biographical Notices, &c. 1830, small 8vo. 110 copies printed on small and 10 on thick paper. See Bibliographer's Manual, p. 1830.
 19. Abstract of the Charters and other papers recorded in the Chartulary of Torphichen, from 1581 to 1596; with an Introductory Notice and Notes. 1830, small 4to. 35 copies printed.
 20. Notes of Charters, &c., by the Rt. Hon. Thos. Earle of Melros, after Earle of Haddington, to the Vassals of the Barony of Drem, from 1615 to 1627; with an Introductory Notice. 1830, small 4to. 35 copies printed.
 21. Trial of David Roy, Cook to Colin Eviot of Balhousie, for a rape committed on the body of Elspeth Eviot, 1st Feb., 1601. 1831, 4to. 30 copies printed.
 22. Historical Fragments relative to Scottish Affairs, from 1635-1664. 1832-1833, small 8vo. 60 copies printed. Contents: Memoirs of Civil Warr, during the Usurpation, by James Burns, Merchant and Bailie of the City of Glasgow, 1644-1661.—The Glorious and Miraculous Battle at York, 1644.—The Diary of Mr Robert Douglas when with the Scottish army in

- England, 1644.—Some Remarkable passages of the Lord's Providence towards me, John Spreul, Town Clerk of Glasgow, in the bygone course of my pilgrimage, 1635-1664.—Collections by a private hand at Edinburgh, 1650-1661.—Sir John Cochrane's Relations of the particulars that have occurred in his Negotiations since coming to Hamburgh, 1649.—A note of the letters taken out of the Trunk that came to Dumbearth; with copies of two Letters from Colonel Gordon and the Earl of Kinnoul, to the Marquis of Montrose, 1649.—A Memorandum to be communicat to Mr Robert Johnson.—A dismal account of the burning of our Solemn League and National Covenant (with God) and one another at Linlithgow, May 20, 1662.—An account of any accessions the Earl of Balcarres had to the late engagement; with a justification of the letter written by his Lordship to the Committee of Estates, 1649.—Declaration of the Inhabitants of the Hill countreys of this Kingdom of Scotland, 1653.—Letter from the Earl of Balcarres to his Majesty King Charles II. Proposals submitted to his Majesty King Charles II. by the Earl of Balcarres. Instructions from his Majesty King Charles II. to the Earl of Balcarres.—Memorials and Letters relative to Mr Alex. Henderson, addressed to Dr James Fraser by the Rev. Robt. Wodrow, 1723, &c., &c., with Biographical Notices and Notes, &c.
23. Catalogues of Scottish Writers. 1823, small 8vo. 80 copies printed on small and 20 on large paper. Contents:—A short account of Scots Divines.—Divines in the Seventeenth Century.—A Catalogue of Scottish writers.—Account of the Learned men and writers in Aberdeen by the Rev. Laurence Charters, minister of Yester and Dirletoun, and Professor of Theology in the College of Edinburgh, with Literary Correspondence, 1698-1723, including letters from Capt. John Slezer, Bishop Sage, Sir James Dalrymple, James Fall, Alexander Pennicuik, James Wellwood, Jas. Anderson, George Crawford, Lord Grange, &c. With Biographical Notices and Notes, &c.
24. The Hubbleshue. By Miss Carstairs. 1834, 18mo. Thirty copies reprinted from the original edition in possession of C. K. Sharpe, Esq., with prefatory notice containing specimens of the Lady's poetry.
25. *Analecta Scotica*: Collections illustrative of the civil, ecclesiastical and literary History of Scotland, chiefly from original

- MSS. 1834-1838, 8vo, 2 vols. 106 copies printed on small and 6 on thick paper.
26. Mary, Queen of Scots: Letters de quelques Hauts personages, adressées a La Reine D'Ecosse, Marie de Guise, tirées des manuscrits originaux et Autographs, recueillis Par Milord Balcarres. 1834, 8vo. 13 copies printed from the original Letters in the Library of the Faculty of Advocates.
27. The Argyle Papers. 1834, small 4to. 50 copies printed on small, 6 on large paper, and 1 on vellum. Contents:—Anecdotes of the Marquis of Argyle and some of his descendants, by the Rev. Robt. Wodrow.—Letter to the Marquis of Argyle, 1640, and Papers relative to his son, Archibald, 9th Earl of Argyle.—Papers relative to the abduction of Miss Wharton, by the Hon. James Campbell of Burnbank, and the Execution of Sir John Johnstone, Bart., for his concern therein.—Letters to and from and papers connected with Archibald 1st Duke of Argyle, 1693-1703.—The correspondence of Elizabeth the Duchess of Argyle, chiefly relative to the Death of her husband, and the Proceedings adopted against Mrs Alison, &c.—Miscellaneous Papers relative to John Duke of Argyle, 1704-1717, &c., including the Burnbank papers, 1710-1723.—Letters which passed between the Hon. Col. Campbell of Burnbank, son of Archibald, 9th Earl of Argyle, and his wife the Hon. Margaret Leslie, daughter of David first Lord Newark and Anne Countess of Moray, to Mrs Campbell of Burnbank, &c., with curious biographical notices and notes. (The original Burnbank notices were purchased by the editor at the sale of the Library of Principal Lee.)
28. The Genealogy of the (Edmonstones) Laids of Ednem and Duntreth from the year of God 1063 to 1699, and more particularly of Duntreth and the family that married with Duntreth during the same time; from the edition of 1699. 1834, 18mo. 25 copies printed on small, 5 on large paper, and 1 on vellum.
29. Ballads and other Fugitive Poetical Pieces, chiefly Scottish, from the collections of Sir James Balfour, Knt., with Introductory Notice. 1834, small 4to. 40 copies printed on small, 6 on large paper, and 2 on vellum.
30. Galations, an ancient Mystery taken down from the recitations of Guisards at Stirling. 1835, 12mo., p. 4. 25 copies printed.

31. Hay's (Father Richard Augustine, Prior of St. Pieremont, Genealogie of the Hayes of Tweeddale, including Memoirs of his own times; with Illustrative Notes, Papers, &c. 1835, small 4to. 108 copies printed, 12 on large paper.
32. Genealogie of the Saint Claires of Rosslyn, including the Chartulary of Rosslyn, with Illustrative Papers, with seven views of Rosslyn Castle and Chapel. 1835, small 4to. 108 copies printed, 10 on small, 12 on large paper.
33. Letters from Lord Pollok to Rev. Robt. Wodrow, 1703;—(two letters from Wodrow to his lordship are added). 1835, 12mo., pp. 21. 30 copies printed on thick paper.
34. Poetical Descriptions of Orkney, 1652, from original MSS. in the Library of the Faculty of Advocates. 1835, small 4to. 35 copies printed.
35. The Correspondence of Sir John Gordon, Bart., on the occasion of the Rebellion, autumn 1745, containing some particulars of those times. 1835, pp. 36. 30 copies on small, a few on thick paper.
36. Stanyhurst (Richard), first four Books of Virgil's *Æneid*, in English Heroic Verse, with other translations of poems. Reprinted from edition of 1583, with a prefatory notice. 1836, 4to. 50 copies printed. See *Bibliographer's Manual*, p. 2783.
37. The Whore's Rhetoric, calculated to the meridian of London, and conformed to the rules of the art in two dialogues, with a curious Introductory Notice and Notes, &c. 1836, small 4to. with 12 portraits of celebrated London courtesans. 50 copies reprinted from edition of 1683, and one on large paper. See *Bibliographer's Manual*, p. 2913.
38. Tuberville's (George) *Tragical Tales and other Poems*, 1587, with prefatory Remarks, 1837, 4to. 50 copies printed. See *Bibliographer's Manual*, p. 2720.
39. Remains of Sir Robert Sibbald, containing his Autobiography, Memoirs of the Royal College of Physicians, portions of his literary correspondence, and an account of his MSS. 1837, 8vo. 35 copies printed, and 1 on vellum.
40. Balfour's (Sir James of Denmylne, Lord Lyon King at Arms) *Ancient Heraldic and Antiquarian Tracts*, with Introductory Notice and Notes. 1837, 12mo. 50 copies printed on small and 20 on large paper. Contents:—The Coronations of Alex. III., Robert II., and James IV.—Treatises on Nobility.—

Ceremonial at Royal Christenings, Rydings of the Parliament, and Register of Interments and Funerals of Kings and Queens and Dukes, together with the principal Scottish nobility.—Countess of Lennox's Memorial, &c.—Proceedings before the Privy Council on the dispute between the Duke of Hamilton and Lord Douglas, relative to the right of bearing the Scottish crown at Royal Processions, as revised by John Riddell, Esq., one of the counsel, &c.

41. Roxburghe Revels, and other relative papers, including Answers to the attack on the Memory of the late Joseph Haslewood, with specimens of his literary productions. 1837, 4to. 50 copies printed.
42. Court of Session Garland. 1839, 8vo. Containing anecdotes of the Early Administration of Justice in Scotland; the Justiciary Opera by James Boswell; the celebrated "Diamond Beetle Case;" the Faculty and Court of Session Garlands; the various jeux d'esprits. 150 copies printed.
43. Epigrams and Satyres made by Richard Middleton of Yorke, Gentleman. From edition of 1608, with a preface. 1840, square 12mo. 100 copies printed. See Bibliographer's Manual, p. 1545.
44. Cock Lorel's Bote from a transcript of the original, by the Rev. Joseph Stevenson, with preface. 1840, square 12mo. 40 copies printed. See Bibliographer's Manual, p. 486.
45. Peerage Cases, 1760-97. Reports of Claims preferred to the House of Lords in the Cases of the Cassilis, Sutherland, Spynie, and Glencairn Peerages, with the opinions of Lords Marchmont, Mansfield, Hardwicke, Camden, and Loughborough thereon, with an appendix of curious documents relative to the Oliphant Peerage, and the decision in the question of precedence between the Earl of Sutherland and Earl of Crawford, &c., &c. 1840, 8vo. 60 copies printed.
46. Scottish Elegiac Verses on the principal Nobility and Gentry, from 1629 to 1729, with interesting Biographical Notices and Notes, and an appendix of illustrative papers. 1842, small 8vo. 90 copies printed on small, 24 on large paper, and 1 on vellum.
47. Extracts from the Diary of a Senator of the College of Justice (James Erskine of Grange), from 1717 to 1718, now for the first time published, with a Memoir and Notes. 1843,

- small 8vo. 70 copies printed on small, 24 on large paper, and 1 on vellum.
48. A new Book of Old Ballads, with Illustrative Notes. 1844, 12mo. 60 copies printed and 1 on vellum.
49. Genealogical Fragments. Berwick-on-Tweed, 1856, 12mo. 50 copies printed, with 12 on large paper.
50. Ancient Earldom of Carric. Some account of the, in a letter to Geo. Chalmers by Dr Carric, now first printed, with notices of the Earldom, after it came into the families of De Bruce and Stewart. Edin., Stevenson. 1857, small 8vo. 60 copies printed. "An interesting work, which will be found of considerable service to those engaged in the study of Scottish Peerage Cases." Some important observations will be found in it on the curious point of the illegitimacy of the sons of the titular King of Ireland.
51. Scottish Ballads and Songs, with Illustrative Notes, &c. Edin., Stevenson. 1859, 12mo. "This collection consists of curious Scottish Ballads and Songs, which, with a few exceptions, do not occur in any other collection. The Illustrative and Introductory Notices prefixed to the Ballads severally, afford much valuable information, and give indubitable evidence that the writer was fully competent to fulfil the duty he undertook."
52. Poetical Remains of William Lithgow, 1618-1660. Now first collected with a prefatory notice of 54 pages. Edin. Small 4to.
53. Penny's History of Linlithgow. Copied from Chalmers' Caledonia. 1832.
54. Notices of the Bannatyne Club from its Institution in 1823 to 1836. 50 copies printed. 4to, 1836.
55. Kay's Portraits of Edinburgh Characters, 2 vols, 4to, 1837. He was the principal and responsible Editor of this work.
56. The Riddell Papers: A Catalogue of the Heraldic and Family Manuscripts of John Riddell, the celebrated Peerage Lawyer, 1863.
57. Scottish Ballads and Songs, 2 vols. 1868.
58. A Book of Scottish Pasquils, 1568-1715. 1862. A new edition.
59. Supplement or Appendix thereto. A Packet of Pestilential Pasquils. 1868.

60. Court of Session Garlands. New edition. 1871.
61. Dramatists of the Restoration. Edited jointly with his nephew, Mr W. H. Logan. 14 vols, 8vo. 1877-78. (W. Paterson, Edinburgh).
62. Mar Peerage. Case of Mr Goodeve Erskine. 1878.
63. Peerage Cases, vol. i., 4to. Not yet published.

In addition to the above, Mr Maidment edited the undermentioned works for the various "Literary Clubs," viz. :—

1. Lyon's Teares for the Death of Alexander, Earl of Dunfermline, 1622.—Bannatyne Club, 1832.
2. Mercer's Chronicle of Perth, 1210-1668.—Maitland Club, 1831.
3. The Melros Papers, 2 vols.—Abbotsford Club. 1837.
4. Miscellany of the Abbotsford Club. Jointly with Mr W. B. D. D. Turnbull.—Abbotsford Club. 1857.
5. Letters and State Papers during the Reign of King James VI.—Abbotsford Club, 1838.
6. Liber Conventus S. Katherine Senensis prope Edinburgum.—Abbotsford Club, 1838.
7. The Spottiswoode Miscellany, 2 vols, 8vo.—Spottiswoode Society, 1844-5.
8. Niccols' Sir Thomas Overburie's Vision, 1616.—Hunterian Society, 1875.

THOS. G. STEVENSON.

*Donations to the Berwickshire Naturalists' Club, from
Scientific Societies, etc., 1879-80.*

- BATH. Proceedings of the Bath Natural History and Antiquarian Field Club, Vol. iv., No. ii. 1879, 8vo. *The Club.*
- BELFAST. Annual Reports and Proceedings of the Belfast Naturalists' Field Club, 1876-77, 1877-78, 1878-9. Ser. ii., Vol. i., Parts iv., v., and vi. 1879, 8vo. *The Club.*
- BOSTON, U.S.A. Proceedings of the Boston Society of Natural History, Vol. xix. Part iii., May, 1877—March, 1878; Part iv. March—April, 1878; Vol. xx. Part i. May to Nov. 1878. Part ii. Nov. 1878 to April, 1879. Part iii. April, 1879—Jan. 1880.—1878-9, 1880, 8vo. *The Society.*

- BOSTON, U.S.A. Memoirs of the Boston Society of Natural History, Vol. iii., Part i., No. ii. The Early Types of Insects ; or the Origin and Sequence of Insect Life in Palæozoic Times, by Samuel H. Scudder ; on *Distomum Crassicolle*, by Charles Sedgwick Minot. Palæozoic Cockroaches, by Samuel H. Scudder, 1878-9. 4to. *Ibid.*
-
- Occasional Papers of the Boston Society of Natural History, iii. Contributions to the Geology of Eastern Massachusetts, by William O. Crossley, with Map. 1880, 8vo. *Ibid.*
- BREMEN. Abhandlungen herausgegeben vom Naturwissenschaftlichen Vereine zu Bremen, vi., Bd. 2 and 3 Heft. 1879, 8vo. *The Society.*
-
- Meteorological Tables, 1879, 8vo. *Ibid.*
- CAMBRIDGE, U.S.A. Annual Report of the Curator of Comparative Zoology at Harvard College, for 1878-9. Boston, 1879, 8vo. *The Museum.*
- CARDIFF. Report and Transactions of the Cardiff Naturalists' Society, Vol. x. 1878. London, 1879, 8vo. *The Society.*
- CATRAIL, THE. Two Photographs: (1) of a Fragment of the Catrail remaining at the Rink ; (2) of the Catrail Fort at the Rink, taken May, 1880.—*Presented by Miss Russell of Ashiesteel.*
- CHRISTIANA. Om Stratifikationer Spor af Dr Theodor Kjerulf. 1877, 4to. *From the Royal Norwegian University of Christiana.*
-
- Enumeratio Insectorum Norvegorum. Fasc. iv. Catalogum Dipteriorum continentem. (H. Siebke et J. S. Schneider). 1877, 8vo. *Ibid.*
- EDINBURGH. Proceedings of the Royal Physical Society. Session 1878-9. 1879, 8vo. *The Society.*
-
- Proceedings of the Society of Antiquaries of Scotland, Session 1878-9. Vol. xiii. 1879, 4to. *The Society.*
-
- Transactions of the Edinburgh Geological Society, Vol. iii., Part iii. 1879, 8vo. *The Society.*
- ESSEX, SALEM, U.S.A. Bulletin of the Essex Institute, Vols. ix. and x. 1878, 8vo. *The Institute.*
- GLASGOW. Proceedings of the Philosophical Society of Glasgow, 1878-9. Vol. xi., No. 2. 1879, 8vo. *The Society.*
-
- Transactions of the Geological Society of Glasgow, Vol. v., Part ii. 1877, 8vo. *The Society.*
-
- Ditto. Vol. vi., Part i. 1879, 8vo. *Ibid.*

- LONDON. Proceedings of the Geologists' Association. Vol. vi., Nos. 1, 2, 3, 4, 5, 6. 1879-80, 8vo. *The Association.*
- Annual Report of the Geologists' Association for 1879. 1880, 8vo. *Ibid.*
- Journal of the Anthropological Institute of Great Britain and Ireland; Vol. viii., No. iv., May, 1879; Vol. ix., No. i., Aug., 1879; No. ii., Nov., 1879; No. iii., Feb., 1880; No. iv., May, 1880. 8vo. *The Institute.*
- NEWCASTLE. Sundry Natural History Scraps, more especially about Birds. By C. M. Adamson. 1879, 8vo. *The Author.*
- PLYMOUTH. Annual Report and Transactions of the Plymouth Institution and Devon and Cornwall Natural History Society, Vol. vii., Part i., 1878-9; Part ii., 1880. *The Institution.*
- WASHINGTON, U.S.A. Annual Report of the Comptroller of the Currency, Dec. 2, 1878. 1878, 8vo.—*From the Department of the Interior of the United States of America.*
- Ditto, Dec. 1, 1879. *Ibid.*
- Report of the United States Geological Survey of the Territories, Vol. xii. Fresh Water Rhizopods of North America. By Joseph Leidy, M.D., Professor of Anatomy in the University of Pennsylvania, &c. 1878, 4to. *Ibid.*
- Bulletins of the United States Geological and Geographical Survey of the Territories, Vol. iv., No. i.; Vol. v., Nos. 1, 2, 3. 1878-9, 8vo. *From Dr F. Von Hayden.*
- Catalogue of the Publications of the U.S. Geological and Geographical Survey of the Territories, 3d Ed. Dec. 31, 1879. *Ibid.*
- WELSHPOOL. Collections, Historical and Archæological, relating to Montgomeryshire and its Borders, Vol. xii. Parts ii. and iii.; Vol. xiii., Part i. London, 1879-80, 8vo. *From the Powys-land Club.*

Places of Meeting for the Year 1880.

Dunbar, for Woodhall and Thurston	..	Wednesday, May 26.
Gordon	.. .. .	„ June 30.
Belford	.. .. .	„ July 28.
Morpeth, for Newminster Abbey and Mitford	„	Aug. 25.
Gilsland, for Roman Wall, &c.	..	„ Sept. 29.
Berwick	.. .. .	„ Oct. 13.

Rain Fall at Glanton Pyke, Northumberland, in 1879,
communicated by FREDK. J. W. COLLINGWOOD, Esq.; *and*
at Lilburn Tower, Northumberland, communicated by
MR JOHN DEAS.

GLANTON PYKE.				LILBURN TOWER.			
			Inches.				Inches.
January	..	..	1.40'0	January	..	..	1.000
February	..	..	4.21'5	February	..	..	2.995
March	..	..	1.68'0	March	..	..	1.377
April	..	..	3.11'0	April	..	..	2.395
May	..	..	2.24'0	May	..	..	2.050
June	..	..	4.73'0	June	..	..	4.475
July	..	..	6.82'5	July	..	..	7.040
August	..	..	3.39'5	August	..	..	2.722
September	..	..	1.06'5	September	..	..	0.805
October	..	..	0.91'5	October	..	..	0.625
November	..	..	2.88'5	November	..	..	2.660
December	..	..	1.37'5	December	..	..	0.595
Total	..		33.83'5	Total	..		28.739

Rain Gauge—Diameter of Funnel,
8in. ; height of Top above ground,
4ft. 3½in. ; above sea level, 517ft.

Rain Guage—Diameter of Funnel, 10in. square; height of Top above ground, 6ft. ; above sea level, 300ft.

General Statement.

THE INCOME AND EXPENDITURE have been :—

		INCOME.	£	s.	d.
Balance from last year	10	13	0
Arrears received	22	10	0
Entrance Fees	9	10	0
Subscriptions	72	18	0
			<hr/> £115 11 0		

EXPENDITURE.

Keith and Gibb for Lithographing ..	6	17	6
Printing	70	12	4
Expenses at Meetings	4	18	0½
Postages and Carriage ..	13	3	0
Berwick Salmon Company ..	7	11	5
	<hr/>		
	103	2	3½
Balance in hand ..	12	8	8½
	<hr/>		
	£115	11	0

LIST OF NEW MEMBERS FOR 1879.

ADMITTED OCTOBER 15, 1879.

Rev. Adam Spence, Houndwood, Reston.
 Peter Cowe, Lochton, Coldstream.
 James Greenfield, Reston.
 James Mein, Lamberton.
 George Skelly, Alnwick.
 Rev. Canon Tristram, LL.D., F.S.A., Durham.
 Rev. David Millar, B.D., LL.B., Mordington.
 Thomas Cook, Alnwick.
 Charles M. Adamson, North Jesmond, Newcastle.
 Alexander Mackenzie, M.D., Kelso.
 W. F. Vernon, Kelso.
 Rev. Charles Kinnear Greenhill, Robertson, Hawick.
 William Layton, High School, Kelso.
 William Gunn, Geological Survey, Berwick.
 Rev. F. B. Nunneley, M.D., Rennington, Chathill.
 Rev. Thomas Calvert, 92, Lansdowne Place, Brighton.
 Rev. Donald McLeod, B.D., Jedburgh.
 Rev. George Gunn, Stichell, Kelso.
 Patrick Kynoch, M.D., Greenlaw.
 George Anderson, Selkirk.
 Thomas Craig-Brown, Woodburn, Selkirk.
 Ralph Dunn, Melrose.
 Thomas Fairley, Galashiels.
 Robert Darling Ker, St. Leonard's House, Edinburgh.
 Hume Nisbet, Studio, Albert Buildings, 6, Shandwick Place, Edinburgh.
 Rev. Robert Small, Caddonfoot, Galashiels.
 Frank Rutherford, Bank of Scotland, Galashiels.
 Rev. A. Duncombe Shafto, Brancepeth Rectory, Durham.
 J. J. Vernon, F.S.A. Scot., Hawick.
 Robert Henry Elliott, of Clifton Park, Kelso.
 J. W. Barnes, Banker, Durham.
 Ralph Patterson Nisbet, Chesterhill House, Belford.
 George Bolam, Berwick.
 Rev. Thomas S. Marjoribanks, Prestonkirk, East Lothian.
 Rev. James King, Vicar of St. Mary's, Berwick.
 James Bogie, 5 Spence Street, Newington, Edinburgh.
 Rev. Alexander Milne, Swinton.
 Francis D. Blake, of Tillmouth Park, Coldstream.
 Andrew P. Aitken, Dr. Sc., &c., Nivelle Cottage, Liberton, Edinburgh.
 F. Bamford, Edenbank, Kelso.
 James Thomas Spencer Elliot, yr., of Wolfelee.
 W. G. Macdonald, M.A., Grammar School, Berwick.
 Thomas Rutherford, M.D., Kelso.

Presented

3 JAN 1888

ERRATA.

PAGE	11, line 6 from the top,	for <i>Jungermanni</i> read <i>Jungermannia</i> .
„	18, line 31	„ for <i>Ænas</i> read <i>Enas</i> .
„	30, line 23	„ for <i>Athemanticum</i> read <i>Athamanticum</i> .
„	36, line 11	„ for most read moist.
„	37, line 16	„ for <i>Thinopsis</i> read <i>Thuiopsis</i> .
„	37, line 31	„ for <i>Hippophæ</i> read <i>Hippophae</i> .
„	42, line 30	„ for have read has.
„	42, line 34	„ for are read is.
„	42, line 38	„ for <i>Taxonia Van Volkheimii</i> read <i>Tacsonia</i> <i>Van-Volxemi</i> .
„	43, line 1	„ for <i>Taxonia</i> read <i>Tacsonia</i> .
„	43, line 6	„ for <i>Lapygeria</i> read <i>Lapageria</i> .
„	54, line 17	„ for Harvey read Harvie.
„	54, line 29	„ for have read has.
„	62, line 14	„ for have read has.
„	69, line 4	„ for compressable read compressible.
„	120, line 21	„ for those read these.
„	134, line 1	„ for <i>Hæderifolia</i> read <i>Hederifolia</i> .
„	145, line 39	„ for these read those.
„	150, line 42	„ for sly read shy.
„	174, line 19 and elsewhere,	for Wolkonsky read Wolkousky.



GRECIAN PHIAL FOUND AT KELSO,

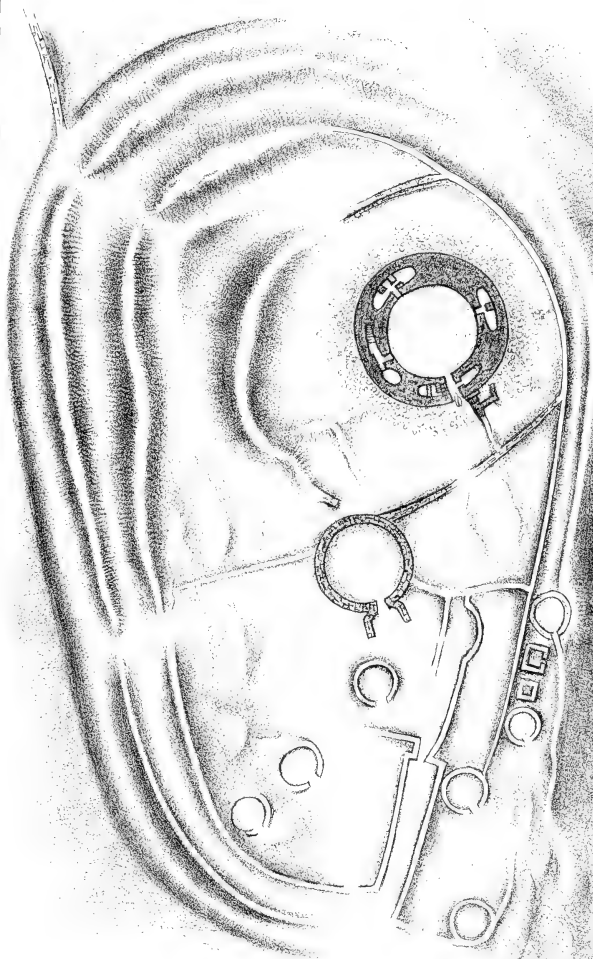
From a Drawing by M^r Frain.



BRONZE POT FROM GREENWOOD MOSS, BERWICKSHIRE,

Drawn by Miss Starling of Renton.



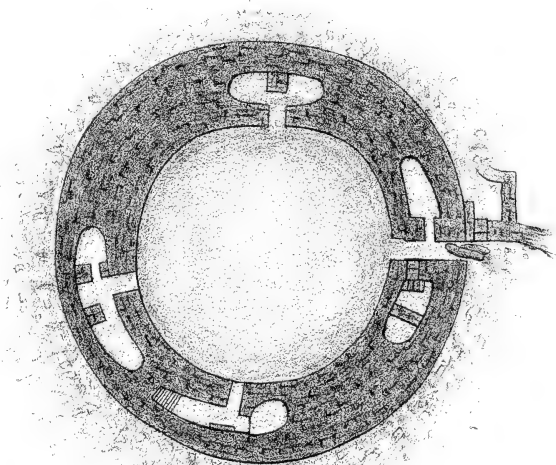


Scale of Feet

20 0 20 40 60 80 100

EDIN'S HALL, ON COCKBURN LAW, BERWICKSHIRE.

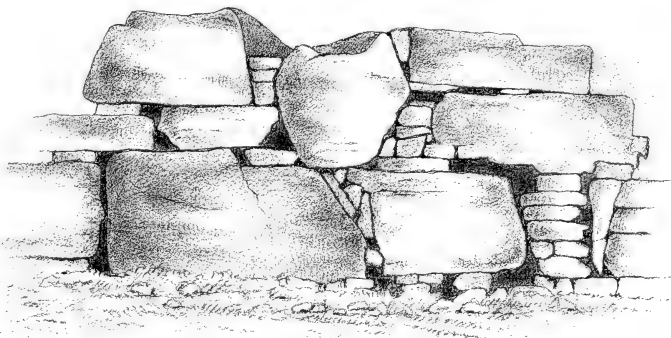




Scale of Feet



PRINCIPAL BUILDING OF EDIN'S HALL.

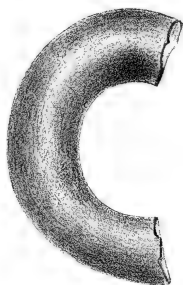
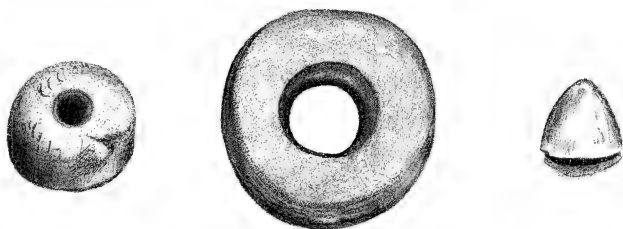


Scale of Feet



MASONRY OF EDIN'S HALL.





Scale:— Full Size.



ARTICLES FOUND AT EDIN'S HALL.





581 is out of print

1880

that office may be changed

number as at that point every

member pt 2 office

177 appears to be mostly printed

some records



PROCEEDINGS
OF THE
BERWICKSHIRE NATURALISTS' CLUB.

*Address delivered to the Berwickshire Naturalists' Club, at
Berwick, October 13th, 1880.* By CHARLES WATSON, Esq.,
F.S.A., Scot., Dunse, President.

GENTLEMEN,

MY year of office as President makes it incumbent on me to thank you for the honour conferred, by electing me to that position.

Although the meetings have perhaps not been so largely attended as in some years, owing to weather and various other circumstances which it is needless to repeat here, I trust you will find, when the year's Proceedings are put into your hands, that our work has not been by any means barren of results. And while on this subject, I would earnestly appeal to every member to endeavour to add, however little, to the pile of information which the Club has been accumulating for so many years, for there is an old and trite saying, if I remember right by the celebrated Border man, David Hume, "that a single man can scarcely be industrious when all his fellow citizens are idle;" the riches of the several members of the Club will contribute to increase the riches of the whole, and it only requires each

individual to consider it his duty to help the common cause, to obtain the desired end.

For some years there has been an innovation on our original unwritten laws. I refer to meetings held beyond what is considered the geographical limits of the Club. Most of the members will agree with me in thinking that this is likely to strengthen the Club ; the old ground has been, although not by any means exhausted, indeed rather otherwise, so well worked over, that a change as above indicated, if not too freely indulged in, will give an additional zest to the meetings, and enable the members, like the bee in the fable, by a universal range, with long search, much study, true judgment and distinction of things, to bring home honey and wax.

Our worthy Secretary, Mr Hardy, has very kindly taken upon him the trouble of writing the details of each meeting, which will, no doubt, prove more interesting than were I to do so.

I cannot help endorsing the opinion of my predecessor in office, that a Jubilee Meeting should be held in 1881 at Grant's House, where the first meeting of the Club was held. Few more interesting places, in many respects, are within the Club's range ; perhaps want of accommodation will be the only objection, seeing that, as a rule, the meetings are now so large, but that objection can, by a little foresight, be easily overcome.

During the current year (1880) a descriptive list of " Our Ancient Monuments and the Land around them," by Chas. Philip Kains-Jackson, with a preface by Sir John Lubbock, Bart., F.R.S., M.P., has been published. Two of our local structures are mentioned, Edin's Hall and Harefaulds in Lauderdale; of the former a very meagre description is given, of the latter merely the name. I only mention this here to call the attention of any of the members who may have influence, and to induce them to use such influence in support of Sir John Lubbock's Bill, or any similar one if again brought before Parliament. Sir John, in his preface,

concludes with the following quotation from Ruskin :—"The dead still have their right in them (these monuments); that which they laboured for, the praise of achievement, or the expression of religious feeling, or whatsoever else it might be which they intended to be permanent, we have no right to obliterate. What we have ourselves built, we are at liberty to throw down; but what other men gave their strength and wealth and life to accomplish, their right over does not pass away with their death; still less is the right to the use of what they have left vested in us only. It belongs to all their successors."

In retiring from the Presidentship it falls upon me to thank, which I do with the most heartfelt pleasure, the Secretaries and those members with whom I have personally come in contact, for their uniform kindness and courtesy, and for their assistance in carrying through the meetings; and also to congratulate you upon the uninterrupted prosperity of the Club, and its growing usefulness evidenced by the numerous imitations that have sprung up all over the land, and the increased desire to join our ranks.

It now becomes my pleasing duty to nominate the Rev. Thomas Brown, F.R.S.E., Edinburgh, who was associated with the formation of the Club, as President for the coming year.

Report of the Meetings of the Berwickshire Naturalists' Club for the Year 1880. By JAMES HARDY.

THE first meeting of the Club for the year 1880 took place at Dunbar, in the St. George Hotel, on May 26th. There were twenty-eight present; including Mr Charles Watson, F.S.A., Scot., President; Mr James Hardy, Secretary; Revs. J. F. Bigge, Stamfordham; Joseph Hill Scott, Kelso; G. W. Sprott, D.D., North Berwick; W. Stobbs, Gordon; R. Hopper Williamson, Whickham, co. Durham; Capt. J. F. Macpherson, Melrose; Dr Charles Stuart, Chirnside; Messrs Thomas Allan, Horncliffe House; W. B. Boyd, Ormiston House; James Bogie, Edinburgh; Thomas Darling, Berwick; Robert Gray, F.R.S.E., Edinburgh; G. P. Hughes of Middleton Hall, Wooler; William H. Johnson, Edinburgh; R. D. Ker, Edinburgh; James Knox, Dunbar; Peter Loney, Marchmont; Thomas Patrick, Berwick; George L. Paulin, Berwick; Stanley Scott, Kelso; J. J. Steytler, London; John Turnbull of Abbey St. Bathans; Adam Watson, Dunse; William Wilson, Berwick; William Willoby, Berwick; Matthew Young, Berwick.

The morning threatened rain, and a high wind prevailed; but at mid-day the sun shone out, and the wind lulled. The country being in its fresh spring array, and the scenes visited being new as well as worth seeing, the excursion was most enjoyable. After breakfast, some of the old Council books (four venerable folio volumes) of the town of Dunbar were inspected with much interest in the Town Clerk's (Mr Notman's) office. These date from the Cromwellian period. The older series was said to have been lost by the shipwreck of a boat, which was transporting the vols. for safe custody to the Bass, when Cromwell's army was about to occupy the town. There are many other documents of the town still extant.

The members were conveyed in carriages. Spott Dean house and village were first touched at. Before reaching these, Lochend, belonging to Sir George Warrender, was passed on the right, which is at present in ruins, the house having been burned down. There are some good yew and silver firs, as well as ornamental conifers, in the pleasure grounds. *Scrophularia vernalis*, a garden escape, is abundant in a half-wild state, in the precincts of the garden. Easter and Wester Broomhouses, next

skirted, are two farms in Spott parish, and were from an early period incorporated with the estate of Easter Spott, but were sold by an improvident laird ; of whom it is still reported by the country people, that when he appeared, after parting with them, at the king's levee in Edinburgh, the courtiers whispered :—“ Here comes the Laird of Spott, with two Broomhouses on his back,” which has become a proverb. Easter and Wester Broomhouses had become the property of the Baillies of Lochend before Nov. 26, 1635 ; so that the saying has maintained a long currency, and points to the first Sir Archibald Douglas of Spott, who sold them to Sir James Baillie, one of the Lords of the Secret Council. Near Easter Broomhouse an upright block of sandstone is conspicuous in a field. This is not a rubbing-stone, but an old boundary or funereal pillar, or the remnant of an ancient judicial circle. In 1635, 1640, &c., title deeds speak of the lands of Standarts, as being here ; and in 1645 there were templar-lands in Spott called “ Standand stain-rig,” which may either refer to this, or to some other similar obelisk. The green banks on either side of the Brock or Spott water, as it flows down by Easter Spott Mill, used to be a great haunt, within Mr Gray's memory, of the Whin-chat (*Saxicola Rubetra*). The brook contains common trout. Leaving the conveyances at the foot of Spott dean, on whose margins many of the slain in the battle of the Doon-hill were buried, the company ascended it by winding walks to the manor-house and garden. The dean is cut sheer through the Old Red Sandstone Conglomerate to a great depth, and is less than a mile long. Like many of the ravines in the conglomerate, there is little more space at the bottom than what is sufficient for the passage of the burn—a lively stream that rushes over many a tiny waterfall. At present the dean is very beautiful ; the tall trees of beech and elm, with which it is well studded, wear their freshest foliage ; and the banks, where not too steep to admit of the retention of soil, were covered with dense sheets of the tempting-looking, but disgustingly scented, *Allium ursinum*, or Ramps (which some plucked, expecting, much to their disappointment, to have in it laid hold of a handful of Lily-of-the-Valley) ; as well as with other representatives of native greenery that do not require special enrolment. Among the declivities on the west side there is a great deal of Hart's-tongue fern, of the *Asplenium Trichomanes*, and of

Polystichium aculeatum, which is a very prevalent fern in the East Lothian ravines. The tall woods give shelter to a rookery. Spott House is finely situated, and a charming place. It is founded on rock at the edge of the dean, and in its present state of completeness is not fifty years old, but it incorporates an older mansion, in which tradition reports that Oliver Cromwell slept the night after vanquishing the Scots on the fields below Doon-hill, Sept. 3, 1650. This old house probably represents another, which appears to have been visited by James VI. in February, 1595, as he then intended going to Spott and Dunglas.* At Spott House, in December, 1592, the attempt, on the 27th of that month, to surprise James VI. at Holyrood Palace appears to have been planned by Bothwell (Francis Stewart) and his accomplices.† The laird of Spott, James Douglas, had a principal share in the adventure. The garden was prettily laid out, and well stocked with evergreens, and a variety of healthy growing Coniferæ; especially noteworthy was a curious Larch, which out of a single stem, was divided into three tall full-grown trees; one ascending from the original stem, the other two forking from a curved branch, which had taken up the growth consequent on some accident to the leading shoot. December's frost, so disastrous elsewhere, had only singed *Aucuba Japonica* here, and that not fatally.

By a winding walk the company proceeded to the top of the Doon-hill, and enjoyed the extensive prospect. A precipitous bank on the N.E. is probably the "Maiden Loup," where three witches, all of whom perished at the stake, the latest in 1629, according to the Scottish judicial records, held an evening convention with Satan. On the eastern slope of the hill stands Little Pinkerton, at which there was formerly a chapel, which was constituted into a prebend of the collegiate church of Dunbar. Edward I., after his first campaign in Scotland, on his return journey to England, stayed the night of Aug. 20, 1296, at Pinkerton.‡ One MS. of Fordun states that the first battle of Dunbar, gained by the English, April 27, 1296, was fought at Spott, so that he rested near the scene of his triumph. Old accounts state that there was a Roman camp (for so British camps were

* Calendar of State Papers, Scotland, ii., p. 672.

† Rob. Jonstoni Hist. Rerum Britan.

‡ Hist. Documents, Scotland ii., p. 31.

once popularly called), as well as the lines of the Scottish Covenanters, traceable on the sloping western side of the Doon-hill. Viewed from Hartside, the highest of the opposite Lammermoors, vestiges of a triple rampart meet the eye, but on the ground these identify themselves with out-crops of rock. This hill-top appears to have been long under cultivation. Looking across to the rising ground on Spott farm, the Dodd or Spott law may possibly represent the "Domilaw above Spot," whereon there was a beacon in 1547. At the western end of the farm of Spott is the Chesters Hill, whereon was situated, but now ploughed over, a vast British settlement containing many acres of space. A gold chain was once picked up within its area attached to the coulter of a plough, which had caught it up. On Spott Moor, about 1297, according to the relation of Blind Harry, who had obtained some local knowledge about this vicinity, Sir William Wallace and his followers fought a battle with Earl Patrick, and was nearly overpowered by numbers, from which he was only extricated by desperate valour, when the foe retreated.

The soil on the upper platform is a tenacious clay, like that produced from decayed Silurian slate. One of the fields is called the Teuchits, having been much frequented, before being drained, by Lapwings.

Above the village many old elm and ash trees mark the site of the houses, or garden plots, or acres of the old population, which began to decrease with the improvement of agriculture. There are scarcely any cottages left, except those attached to the farm. The manse, the church, the school and school-house may be said to represent the village. In 1730 there were twenty-one farmers in the parish; in 1791 these were reduced to seven; and, exclusive of sections belonging to farms, whose main bulk lies in other parishes, the number of separate farm-holdings appears at present to be nine.

Tradition says that the farming people of Spott were much alarmed with the Highland invasion in 1745, which they spoke of as the period "when the 'Black Watch' came through." To prevent their cattle being requisitioned for the supplies of the rebel army, they drove them for concealment to Spott Wood. After the battle of Prestonpans, the rebels carried off a cargo of wine from the laird of Spott's cellars in Dunbar.

The *jougs*, once the terror of parochial culprits, are now at-

tached as a fixture to the side of the church door. They were dug out from about the foundations of the building. One of the tombstones, nearly grown up with grass, has sculptured on it a cross and sword, and may mark the resting place of a knight templar, or knight of St. John, as there were several templar lands here. St. John's well, which is conducted in pipes to Dunbar, it is almost certain, derived its name from the knights of St. John of Jerusalem, who acquired most of the templar lands on the dissolution of that order. That they might have resided in Spott appears from a Retour, Oct. 29, 1640, where the templar lands are explained as being "dwellings and buildings in the village of Spot, and templar lands in Easter and Wester Broomhouses."

On regaining the carriages a good view of the country at the foot of the Lammermoors here lay in view. The face of the land hereabouts is very unequal—one may say tumultuous—being separated into sections by deep cleughs descending from the hills, or by other gullies running cross-ways to these; in some instances presenting long flat-backed ridges, and in others heaved up, or rather worn down—for that is the process that has moulded them—into detached hillocks (called Knocks, or Knowes, or Dodds), of conical and a variety of irregular forms. Places that appear to the eye to be distant but a short way are removed far apart by these hidden ravines, which are often so steep and destitute of passes, with no passage up or down except for the stream between their banks, that one has to take a far circuit to get across them. The level of the tops of the sides of these ravines usually coincides. Many of the deep cleughs are wooded with native trees. Small groves also crown the brows of the green steeps above grassy dells; these, if of oak, were at the period of the meeting, of a yellow green intermingled with the tints of the brown branches. Elsewhere, crowded into masses of one uniform height, the trees occupy a whole hill-face, growing like a corn crop. Amidst them will tower up, singly or in groups, scattered holly-trees of ancient growth—for seldom is a holly cut down—always remarkable for their weather-beaten aspect, and their dark solemn hue. There are groups both of mountain ashes and hawthorns occupying special banks, but the latter are not so well branched as in lower districts. Nearest the hills the birch prevails. The indigenous trees here are oak (which predominates), birch, hazel, mountain ash, wych elm, sallows, holly, bird cherry, ash (doubtfully native), hawthorn.

Along a cross ravine, which lies between Halls and the Dryburn, separating Spott from Helden, runs a series of lochs—the Black Loch being one—which are filling up. Some of them have no outlet. They are frequented by wild ducks and water hens. One contains perch. The Brunt Wood, mostly of oak, faces to the west. Blue hyacinths, forming great stretches, gleamed through amongst the trees; and the sides of the woods were clad with stitchworts, which open in a sheet of white when the sun shines, but close up when rain falls, and become assimilated in verdure to the grass. A marsh at the bottom was one mass of rich gold with the blooms of the marsh marigold.

While those who preferred passed on to Innerwick and Innerwick Castle, a walking party detached themselves, on reaching the Dryburn below Brunt, and proceeded up into the centre of the Woodhall woods. The ravine now entered, like that at Spott, is cut in the Old Red Conglomerate, and probably follows the line of an original fissure, subsequently widened out and dressed by abrading agencies. A narrow porphyritic dyke crosses the stream, north and south, shortly after the haugh here has been entered. On the banks of the southern side, which, as well as those on the north, are wooded, the profusion of primrose blossom was excessive, as it has been in most places where it grows this season. At Wallace's Mill, which is mentioned in old writs, there are only now the remains of the garden-fence, which was of Bour-tree. Here *Myrrhis odorata*, *Pyrethrum Parthenium*, *Ægopodium Podagraria*, and *Circæa Lutetiana* grew, the only relics of the kindly folks who “wonn'd in the glen,” when the tenants' corn was thirled to the laird's own mill. In going up into the woods the party kept to the paths, there being no time for divergence. The trees are mostly of oak. The more interesting plants in this and the adjoining Wodolie dean, and in their forks, which stretch far away up into the hills are—*Stellaria nemorum*, *Vicia sylvatica*, *Campanula latifolia*, *Rubus saxatilis*, *Melica uniflora*, *Chrysosplenium alternifolium*, *Adoxa moschatellina*, *Veronica montana*, *Saxifraga granulata*, *Sisymbrium thalianum*, *Myosotis sylvatica* (very fine and abundant), *Endymion nutans* (white var.), *Sanicula Europæa*, *Enanthe crocata* in marshes, *Epilobium angustifolium* (where the ravine, after a long curve, turns towards the hills), *Cistopteris fragilis* (frequent), *Scolopendrium vulgare*, *Polypodium Dryopteris* (frequent), *Polystichium*

aculeatum, *Asplenium Trichomanes* (very luxuriant), *Asp. Adiantum-nigrum* (profusely among dry rocks). The vegetation in general was that characteristic of a dry soil. Juniper bushes were occasional, but are more abundant on the hill faces. *Viburnum opulus* grows in a ravine near Halls, and above Thurston Mains, on Thornton burn. Elder occasionally appears. *Encalypta streptocarpa* grows on rocks in Halls wood. The Halls burn, the Dryburn, and the Thornton burn all contain the common trout. The woody-gall of the oak has appeared in these woods. The wind made it disadvantageous to mark birds, but at a corresponding period in last season the following, among others, were noticed here :—The greater and cole-tits, the wren (very scarce), red-breast, bull-finch, grey linnet (especially where there was furze), willow-wren, wood-wren, black-cap warbler, blackbird, thrush (scarce, and still remains so), sedge-warbler, white-throat, grey fly-catcher (far up near the hills), red-start (near Thurston), wood-pigeon, pied wagtail, sand-piper (not arrived this season), coot, water-hen, dipper, carrion-crow, heron. On wet fields near Woodhall and all along the brows of the Lammemoors lapwings have their breeding-places; curlews, golden-plovers, and grouse have their home on the heaths; and wild ducks in the marshes. The cuckoo frequents the moor-edges in numbers, where the pipit-lark builds, in whose nest the young cuckoos are often found by the shepherds. The ring-ouzel nestles in some of the cleughs; and the wheat-ear on the stony ground, formed where the Silurian rocks surmount the conglomerate deposits that lie in a trough along their base.

Time would only permit reaching the deeply-cloven fissure where the dean takes an abrupt turn at right angles, and where the steep rock overhangs on both sides at a considerable width. This is called "The Tinkler's Loup," because a tinker, in escaping with manacled hands from the officers of justice, once leapt the chasm without breaking his neck. The people tell of a boy who here fell over the precipice and was killed. "Hawks," perhaps kestrels, build in the rocks of this wild part of the dean. Some of the promontories or protuberances in the adjoining dean have peculiar names, such as the Kimmerstock Knowe and the Priest's Pulpit. One of the fields on Woodhall is called the Boar's Loch, and there is a tradition that the last wild boar that haunted that part of the country was killed there.

A shepherd's house on the height above, where one of these deans collects the waters from the hills, is called Boonsley. It belongs to Pinkerton, and represents the shielings of the men of Pinkerton mentioned in one of the old Kelso charters, who had common rights on the Earl of Dunbar's moor. This was in the reign of Malcolm IV. The walk was now in the reverse direction down the water-side towards Thurston. Below the road crossing to Brunt, where old Brunt Mill stood, the valley was open, but was constantly intersected by the stream wandering from side to side, and requiring repeatedly to be crossed. The Brunt side, facing the south, was in a blaze of colour with the blossoming furze. On the Thurston side were several sheltered nooks, whence the pale primrose glanced from amidst the green grass. Gaining at length the Thurston woods the footpaths were labyrinthine, and full of walks leading to false issues, but by keeping the burn within prospect, the party extricated itself. Now hollows were crossed filled with primroses with particularly large blossoms, and then heights were scaled from which fine bits of scenery were visible on the opposite side, or some peak was gained that commanded the view of the entire valley, with its wimpling stream. *Vinca minor* is extensively planted in the woodland shades, and thrives well. There were many fine swelling beeches of tall growth. A rookery was passed near the farm, and there is another still more extensive on the grounds, which has cast off a colony that populates a planting on a height above Thurston Mains. At length the carriage drive to Dryburnford Lodge, which was the trysting place for meeting the conveyances, was struck. At the lodge there was on view a three-footed bronze pot. This was a very neat pot, ornamented with three projecting lines round the thickest part, and the mouth had a neatly bevelled lip. It was quite perfect, and had been found when cutting a drain at Thurston Mains. The carriages had just halted, after driving up to Thurston House, when the walking party arrived in view. Those who had visited Innerwick Castle were greatly taken with its situation, and its sylvan and craggy environments. It belonged to the Hamiltons of Innerwick, who obtained it by marriage with a De Glay heiress. Some old-fashioned flowers, among others *Anchusa sempervirens*, still lingering there, were picked up. The wood wren was heard. *Cistopteris fragilis* descends the burn from the

hills to the neighbourhood of the castle. The castle (which is figured by Grose) belongs to Lady Mary Nisbet Hamilton.

At Dunbar, after partaking of a most sumptuous dinner, business was proceeded with. Messrs John Crawford Hodgson of Buston Vale, Lesbury; John Sadler, curator of the Royal Botanic Gardens, Edinburgh; and Joseph and Ralph Moore, superintendents of mines, Inveresk, were proposed as members. A letter was read from Sheriff Russell relating to a badger trapped on Timpendean Moor, and killed after it had made off with the trap. It was mentioned that Mr Robert Calder's hounds had once killed a badger near Foulden. Below Thurston Mains there is still a bank called the Brock-holes. Mr Robert Gray read a paper on Mr Alexander Wilson, the Paisley poet, and American ornithologist, containing an extract from his journal of a visit paid by Wilson to Dunbar on September 24, 25, and 26, 1789. Mr Gray exhibited several most interesting relics of Wilson from his private collections. These consisted of—1st, A portrait with autograph; 2, Letter addressed to Miss Sarah Millar; 3, Original Drawing of the Hermit or Solitary Thrush; 4, Thirty-three proof plates of Wilson's work on Birds; 5, Rough medallion portrait; 6, Photograph of Wilson's grave. Mr Gray also exhibited a photograph of the eggs of the Great Auk. The President exhibited two books acquired at Mr Maidment's sale: (1) Genealogical account of the family of Home of Wedderburn, by John Home, who died in 1791, with MS. notes by Mr Maidment. John Home claimed to be the rightful heir of George Earl of Dunbar, as well as heir male of the family of Home of Wedderburn. (2) A collection of Parchments labelled "*Chartæ et Sasinæ Antiquæ 1451-1582.*" The first of these is a charter by William Earl of Douglas of the lands of Hutton Hall, Berwickshire, to George Ker, dated at Edinburgh, 11th January, 1451.—A MS leaf of one of Thomas Boston's sermons, sent by Mr David Jerdan, Dalkeith, was handed round, as a specimen of the careful hand-writing of the author of the "*Fourfold State.*"

Much interest was felt in the exhibition of the flag of Henry Hall of Haughhead, in Teviotdale, the famous Covenanter, which had been borne at the battles of Drumclog and Bothwell Bridge. It is of blue silk, and carried in red letters painted on it the vindictive inscription, "*NO QUARTERS TO YE ACTIVE ENEMIES OF YE COVENANT.*" The golden letters of another

inscription are falling out, so that the flag could not be fully unfolded. Its story is told by Mr James Drummond, the artist, in the Transactions of the Society of Antiquaries of Scotland. Mr Drummond found this banner in the possession of Mr and Miss Raeburn, Dunbar, and after much persuasion he was allowed to see and make a drawing of it. "It is of blue silk, here and there a little faded; but having been treasured as a valuable heirloom, is in very fair preservation, and is inscribed in Hebrew characters (gilded), 'JEHOVAH NISSI,' (see Exodus xvii., verses 14 and 15), 'The Lord is my Banner.' From some cause or other, the cloth has given way where many of these letters are painted, and what remain are so tender, that they will scarcely bear touching. The next line is painted in white,—'FOR CHRIST AND HIS TRUTHS;' and then come the words 'NO QUARTERS TO YE ACTIVE ENEMIES OF YE COVENANT.' This seems to have been first painted in a light colour, and afterwards repainted in a dull, faded looking red, in fact quite a bloody colour. It is 4 feet 5½ inches by 3 feet 5½ inches. Its history, as given by the proprietor, is as follows:—It belonged to Hall of Haughhead, a zealous Covenanter, and one of the leaders at Drumclog and Bothwell Brig, from the latter of which engagements he escaped and fled to Holland, but shortly after returned. While lurking near Queensferry, an attempt was made to seize him by the governor of Blackness Castle. Hall, being mortally wounded in the struggle, died on his way to Edinburgh as a prisoner. On his person was found an unsubscribed document, afterwards called *The Queensferry Paper*. Hall's son, while on his death-bed, gave the banner to a zealous Covenanting friend, of the name of Cochrane. His own son, having turned Conformist clergyman, was considered unworthy to be custodier of such a precious relic. This Cochrane after wandering about from place to place, settled in Coldstream; his son again, bequeathed the banner to his youngest daughter Mary, who married Mr Raeburn of Dunbar, the father of the present proprietors, now a very aged couple. Along with the banner, there was a chest of arms, which had been used in Covenanting times; these, however, have been gradually given away to friends, excepting two swords."

In the present vol. of the Proceedings, pp. 22, 23, 56, I called attention to this flag, and also to the descendants of Henry Hall. They were of the ancient border family of the Halls of

Newbiggin, parish of Oxnam, some of whom I find about 1622-3 to have been notorious Border thieves.* Dr Robert Hall, the descendant of the Covenanter, died in 1824; in his latter years apparently he was dependent on his pen for a livelihood. There was a Mrs Hall, daughter of Mr Crombie, a writer in Jedburgh, who married a Dr Hall, who belonged to the Jedburgh district, and settled in London. Whether this was, or was not, Dr Robt. Hall, no one can tell me. She wrote a story in *Fraser's Magazine*, more than forty years ago, entitled "The Autobiography of a Scottish Borderer," which has been republished in Jedburgh, in 1874. She is said to have "endured a chequered life in the metropolis, for her lot was one of trial and privation. When the accustomed sources of support failed, she had to betake herself

* THE HALLS OF NEWBIGGING.—At Jedburgh Circuit, 1622, "Adam Hall, callit of ye Buss, in Newbigging," was outlawed for non-compearance for the crime of theft or reset of theft. In April, 1623, "Jone Hall, callit Cheiff, in Newbigging, and Lancie Hall there," were accused of stealing a mare belonging to Roger Hall, in "Daviescheill," Northumberland, and were "clengit;" but for resetting seven nolt, stolen from "Heronnesclois," and being act and pairt with John Hall of Heviesyde, then an outlaw and fugitive, in selling them, they were "fylit" or found guilty, and were sentenced to be executed. In the same Circuit "Jon Hall, callit the Gumer," was accused of the theft of the mare from Davyshiels, and cleared. Adam Hall of the Bus, was entered as a pannel by his cautioner Adam Hall in Newbigging; and the same "Adie, callit of the Bus, in Newbigging," was found guilty of stealing a cow pertaining to William Ker of Ancrum, from the lands of Spithoip in England, and was sentenced to be "brunt on ye cheik with ye common birning irne of ye burghe of Jedburghe." (*Wilson's Annals of Hawick*, pp. 247, 275, 300, 281, 292, 297, 304.) Previous to this the Haugh-head Halls had obtained possession thereof. In the Taxt Roll of the Abbey of Jedburgh, 1626, "Hall for the half of Haugh-heid, worth 15 bolls, payes 33s. 4d." (*Morton's Annals of Teviotdale*, p. 62.) The lands of Newbigging were then held by Andrew Kerr, Master of Jedburgh. (*Ibid.*) "The Newbigging Lairds," we are told in a paper by Mr William Brockie, in the *Border Treasury*, p. 186, were tenants for generations, by payment in kind, to the Abbey of Jedburgh, and continued to make good their footing against the Lothian family, till the beginning of the present century, when their titles being questioned, they were evicted by a decree of the Court of Session. The "folks of Newbigging," were a primitive people. It is told of them that they attempted to catch the moon by means of a ladder placed on a hill, behind which it was seen to shine, but when they reached the top, the luminary was as far distant as ever. On reaching the village, when they returned, "one of the party declared, to his astonishment, that he found the moon shining into the hens' baulk. The moon, they concluded, was too fickle to lay hold of."

to her pen, to eke out a precarious subsistence for herself and family." She attended the debates in the House of Commons as a reporter, clothed in apparel she had borrowed from a pawn shop. She translated several works from continental languages, one being "The Exiles of Siberia." She died in London, in the end of the year 1846. Nothing is known of the fortunes of her family.

To return to the Covenanting Banner, which has occasioned these remarks—after the death of the Raeburns, it passed to Mr William Sinclair, Hartfell House, Moffat, who is also the possessor of the sword of Col. Cleland, another national hero, who was an officer both at Drumclog and Bothwell Bridge; and fell 21st August, 1689, at the head of the Cameronian regiment, manfully defending the churchyard of Dundee against a superior force of Highlanders, the remains of Dundee's army, who were defeated and never rallied again. Mr Sinclair, who is a skilful draughtsman of birds, is a native of Dunbar, or its neighbourhood, and he obligingly forwarded the trophy from Moffat on the occasion of the Club's visit. An old long-barrelled musket, a pistol or carbine barrel, and a sword blade, which were connected with the flag, were also shewn. Mr Graham, Dunbar, sent for the inspection of members an old Geneva Bible of date 1561. Mr Loney brought from Marchmont, *Galeobdolon luteum*, and a *Geranium*, of which there were doubts as to the species; the first was growing there in a half-wild state. Mr Thos. Darling mentioned having shot on the Tweed, near Berwick, during the winter, a very small gull, which had occasioned some controversy. It kept itself apart from other gulls. Professor Newton, to whom it had been submitted, considered it to be a dwarf of the black-headed species, *Larus ridibundus*. It is noticed by Mr Brotherston in the present vol. p. 177, under the head of "Masked Gull" (*Larus capistratus*).

The second meeting was at Gordon, on the 30th of June; and although held in a rural situation, it was very successful and numerously attended. A loft or granary behind one of the village inns was fitted up, and a licence procured, and the company dined there with every comfort. The weather was not the most favourable, as heavy blasts of rain occurred repeatedly, but the spirit of adventure set at defiance the fickleness of the elements; and the mind, amidst researches of an encouraging character,

was too absorbed to attend to physical discomforts. Thirty assembled; including Mr Watson, President; Dr Francis Douglas and Mr Hardy, Secretaries; Revs. James Farquharson, M.A., Selkirk; Alex. Phimister, M.A., Gordon; and William Stobbs, M.A., Gordon; Messrs D. Angus, Edinburgh; W. L. Blaikie, Holydean; James Bogie, Edinburgh; W. B. Boyd, Ormiston; Andrew Brotherston, Kelso; Alexander Dewar, M.D., Melrose; Charles Douglas, M.D., Woodside; John Freer, Melrose; W. A. Hunter, Dunse; William H. Johnson, Edinburgh; R. D. Ker, Edinburgh; Peter Loney, Marchmont; Alexander Mackenzie, M.D., Kelso; Joseph Moore, Smeaton Park, Inveresk; Capt. F. M. Norman, R.N., Berwick; Robert Renton, Fans; Francis Russell, Jedbank; John Sadler, Royal Botanic Gardens, Edinburgh; William Stevenson, Dunse; Charles Stuart, M.D., Chirnside; J. Erskine Stuart, M.D., Dunse; John Thomson, Kelso; Thomas Turnbull, Lilliesleaf; James Wood, Galashiels.

The railway bank exposes the Old Red Sandstone near the Station, not far from where the basalt forms an overflow. The basalt quarried near the Station is employed for road metal and paving stones. The traditionary site of Gordon Castle is on a *kaim*, now planted with fir trees, at the side of the public road, N.W. of the Station. A few fragments of pottery were the only relics exposed, when the line was cut across what might have been its outworks; and there was no indication of a sewer. The plantation on the roadside to the village is cumbered with basaltic boulders; but none of them shew glacial markings. These are examples of the obstructions, that the feuars of the ground to the east of the village had to contend with, when it was reclaimed. The numberless blocks that they excavated were utilised in building enclosures to the intakes of double the usual thickness, or were fractured to fill up drains. The village is mostly constructed of basalt. It consists of a lengthened double row of houses, one on each side of the public road, and has a cleanly look. Water is plentiful, being found wherever the basalt cuts the sandstone.

The Rev. William Stobbs shewed the members through the church and churchyard. The church is a plain modern edifice, but is roomy and comfortable in the interior, and is seated to accommodate about 300 persons. Mr Stobbs said that in introducing the heating apparatus, the workmen about the centre of

the building came upon a pit of about a yard square in which 76 skulls were huddled together, and a number of thigh bones corresponding to these, as if they had been removed from some other situation, and deposited there. It was remarked that the skulls were extraordinarily thick, and the thigh bones were acknowledged to be longer than those of the past or present generation. The teeth were wonderfully perfect. Farther along the passage, several complete skeletons at intervals were found, disposed east and west. All these were conveyed to the churchyard for re-interment. One of the seats in the church, on the authority of the Session Records, was called the Wedderlie seat, set apart for the Edgars of Wedderlie.

In the churchyard there are no particularly old stones, except some slabs that had been resuscitated, when a small portion of the surface had been levelled. Several of these are of the red sandstone of Greenlaw quarry. The following inscription appears on the stone over the grave of Thomas Henderson, formerly schoolmaster of Gordon, who died January 13, 1772 :—

“ Ah he was great in body & in mind
A loving Husband & a Father kind
As he most men Excided in his Stature
So he Exceled in his Literature
But although he is gone and greatly mist
God's good will be done we hope he is blest”

For a list of the ministers of Gordon, extracted from Dr Hew Scott's "*Fasti Ecclesiæ Scoticanæ*," I am indebted to our President, Mr Watson. The church was dedicated to St. Michael, the Archangel, and previous to the Reformation belonged to the Abbey of Kelso.

Archibald Fairbarne, reader from 1574 to 1585.
Thomas Storie, removed from Bassendean, 1609-1625.
Francis Collace, A.M., 1625-1647.
Norman Leslie, A.M., 1647-1657.
John Hardie, A.M., 1659-1662. (*deprived*).
James Straiton, A.M., 1682.
John Findlay, 1682-1685.
Thomas Mabane, A.M., 1685-1689. (*deprived*).
John Hardie, A.M., M.D. (*restored*), 1690-1707.
David Brown, A.M., 1708-1726.
John Bell, 1727-1800.
Robert Lundie, 1801-1807.
Walter Morison, 1807-1814.
David William Gordon, 1814-1824.

James Paterson, 1824-1855.

William Stobbs, A.M., 1855.

The trees and shrubs about the village had not suffered much from the winter; the ivy in particular was unimpaired. At the manse, however, under the shelter, the Laurestinus (*Viburnum Tinus*) and a variegated shrubby Veronica were killed; and the common laurel-bay was cut down to the ground. None of the yews nor hollies were hurt, and the box was uninjured. After a time, I was told, apple trees get lichened in the garden, and gooseberries do not bear well. This year the apex of the shoots of the gooseberry, here as elsewhere, were attacked in an extreme degree by *Aphis Grossulariæ*. A fine double-hosed cowslip of the *elator* form is cultivated in the flower border.

At Gordon, Mr Thomson picked up the following scrap of folklore:—"There is a good story told of some worthy Gordonians who, wishing to have perennial spring and summer, thought to attain their object by building a high wall round a place frequented by the cuckoo. But the bird escaped, and the 'Gowks o' Gordon' consoled themselves by the reflection that the wall had not been built high enough. Some worthy 'Gowks' in the village also tried to drown eels in a pool near where the railway station is now situated, but, being unsuccessful, alleged the water was not deep enough." Both specimens of Gothamism, I have mentioned in an article on the "Popular History of the Cuckoo," in the *Folk-Lore Record*, ii. pp. 67-69, but not as applicable to Gordon. The cuckoo story is found at Lorbottle, in Northumberland. Some of the inhabitants in the vicinity, although they have no documentary evidence, have traditions of the long continuance of their families in one holding. The family of one of the farmers in the parish has been in occupancy of the same place for 200 years. An old man has lately come to the parish from Hume, where, it is the family belief, his ancestry had lived for 400 years.

To widen the sphere of observation, three sections were formed; one party betook themselves to Mellerstain woods and Gordon Moss; the other two, one on foot and the other by conveyance, passed to Greenknow and Bassindean, but afterwards held a separate route; and each of them at the close had something distinctive to relate. The first headed by Mr William Boyd and Dr Charles Stuart, was the earliest to start. The walk was most productive of plants. In Mellerstain

woods they found *Linnaea borealis*, large quantities of *Listera cordata*, and abundance of *Goodyera repens*, while in Gordon Moss they noticed *Catabrosa aquatica* (a somewhat rare grass). *Stellaria glauca*, *Orchis incarnata*, *Utricularia minor*, and several Potamogetons. Mr Sadler found one specimen of moonwort (*Botrychium lunaria*) which measured 14 inches from the tip of the spike to the root. The list of plants got, drawn up by Dr Stuart and Mr Sadler, is too long to introduce here, but will be given as a separate paper, along with the plants Mr Brotherston had gathered in coming to the meeting, and subsequent discoveries by the Rev. W. Stobbs. Dr Stuart has kindly supplied me with his observations on the birds that were seen in the moss.

“Larks are plentiful here, having abundant shelter for nesting in the rough cover in the bogs. While sheltering in a clump of willows from a heavy shower, the attention of the members of the Club was attracted by an extraordinary noise proceeding from some bushes, quite close to where we were, as if produced by a concert of grasshoppers. The noise resembled very much that of a ratch fishing reel, when being wound. This sound was the note of the grasshopper warbler (*Sylvia Locustella*), a very interesting summer visitor. In former years I have heard it at Ninewells, in the parish of Chirnside. This season it has been heard in the Kirk Walk, Whitehall, and at Hammerball, Blannerne, parish of Bunkle, within a few miles of Chirnside. This bird is very shy, and takes good care not to show himself to every one. By lying down in the wood at Ninewells and watching, I observed him come out of an alder bush surrounded by the wood-rush, and run along the ground like a mouse to another place of shelter. He is of a brown colour, and rather larger than a hedge-sparrow. From the information of Mr Watson, it has been observed this season at Chapel, near Dunse.” [The nest has been seen this season near Paxton, and at the margin of the wood to the north, close beside Grant’s House. It has been long known in that vicinity, and its distribution extends to the sides of the Pease dean. It was more numerous, before the meadows at the side of the railway were cultivated, which was about fifty years ago, before the era of railways.] “In the bog on the north of the Berwickshire railway, we also heard the notes of several of the warblers. I caught a young sedge-warbler (*Sylvia Phragmitis*), a very beautiful little bird. Its

parents were close at hand, and in plaintive notes, lamented the loss of their young one. After examination, I had the pleasure of safely restoring it to their care. On liberating the bird, it flew into the middle of a water-hole, alighting on a reed, in the very attitude in which Morris in his book on British Birds, has portrayed it. The stone-chat (*Saxicola Rubicola*) and the whinchat (*Saxicola Rubetra*) were in considerable numbers in the bogs; and many other warblers—which owing to the wet state of the weather we were unable to examine more particularly.” This is still one of the haunts of the reed bunting, “coal-hood” or “black-cap” (*Emberiza Schanichus*), of which considerable numbers breed here. The common bunting frequents the neighbourhood in spring.

Since the meeting, Mr Stobbs has sought out a resident bird-fancier, from whom he obtained some ornithological data, which are always welcome in regard to a neglected locality. Concerning the chimney swallow (*Hirundo rustica*) he states that in the summer of 1876 or 1877, the season was so cold that only about a couple of pairs could be observed in Gordon parish. They generally depart in the last week of September for the old birds, and about ten days later for the young ones. The swift (*Cypselus Apus*) called “cran,” occurs occasionally. The favourite rendezvous of the swallows before starting for the south is the steading of Greenknowe, or the church-roof. A great many rare birds come to Gordon Moss, at all seasons of the year. The grasshopper-warbler is an yearly visitant to the moss, where he has seen its nest. He often sees the bullfinch in the woods. This summer he saw a pair of goldfinches. The parish is rich in species of titmice. He speaks of a wren with a spot on its crown, called the “weary” or “wheary” (*Regulus aurocapillus*.) Siskins (*Fringilla Spinus*) were very numerous in the moss, when Mr Stobbs wrote, Nov. 5. He has a number of stuffed starlings with varied plumage, for they are much given to “sports.” He has twice seen wild swans, but they were in flight. A great variety of ducks and aquatic birds visit the parish. He once got a pair of shovellers (*Anas clypeata*); and shewed a wigeon (*Mareca Penelope*) that he had shot lately. He has seen the kingfisher on the Eden, and pretty frequent on the Leader. He has got other birds, which he does not know properly, among others a rare owl. In regard to the screech-owl (*Strix stridula*) I notice,

that William Brookie makes the remark, that "a dreadful creature of this species, whose haunt was on the west side of Mellerstain Hill, near a place called the Yallow Door, was long known, and perhaps is still, by the name of *Roarie*." The common viper (*Pelias Berus*) is very numerous in the southern or Fans part of the moss. On the day of the Club's meeting, Sheriff Russell captured *Argynnis Selene*, one of the small fritillary butterflies, for which this is a new locality. The pretty orange-tip butterfly (*Anthocaris Cardamines*) is also found here.

On the geological features and present condition of Gordon Moss, Mr Stobbs supplies the following remarks:—"The moss is one by nature, but belongs to four proprietors. It is divided by a stank, which helps to drain it. The moss has been a lake unable to drain itself, by its outlet deepening its bed in the course of ages. A dyke of basalt that crosses the country at its eastern extremity proved too tough to be so easily worn down as the rest of the land. This dyke had to be blasted with gunpowder when the stank was made, and the moss drained about 60 years ago. There is a succession of very fine springs down the course of the trap or basalt dyke that breaks through the red sandstone, from the railway station to the moss. In the moss there is a well-known 'verter,' *i.e.* virtue well, which has a strong tincture of iron." Hazel and birch are the chief ligneous constituents dug up in the moss. The monks of Kelso Abbey had two petaries here; and six cottages of which each of the tenants was bound to deliver annually thirty wain-loads of dry peats at the cloister.* Each husbandman of the 28 husbandlands of Bolden or Bowden, Roxburghshire, was also obliged to furnish a wain to carry peats from the moss at Gordon to the Abbey.† These amounted to 208 wain-loads per annum.

There was only conveyance for a limited number, and these were associated with the second walking party, part of the way. Leaving by west end of the village, the "Hanging Stone" was pointed out—a mass of rock dependent from the bank above the railway. The story is, and it is a myth attached to other "Hanging Stones," that a pedlar who had been resting there got his head into the aperture between two of the blocks, and was

* Morton's Domestic Annals of Teviotdale, p. 134.

† Ibid, p. 121. They first carried them to a place of storage at "The Pools" (le pullis), and thence to the Abbey in the summer (p. 165).

accidentally hanged. See Club's Proc. vol. vi., p. 370. Greenknowe Tower, on the opposite side of the railway, was then visited. The tower is built on a small plateau in the midst of a moss, and at one time must have been nearly surrounded by water. The foundations are much older than the superstructure, the turrets at the corners being comparatively modern. The outhouses have been cleared away, with the advantage of rendering the building completely obvious. It has a patched appearance close at hand, but is a picturesque object from different points among the well-grown trees of the park. It is a square keep almost entire, measuring 34 feet east and west, by 36 feet; constructed of red sandstone and basalt. The windows are of a modern square-headed type. As it now stands most of it was built by the Seytons or Setons. Over the doorway are cut two shields with coats of arms, with the initials J.S. and I.E., and the date 1581. The arms on the one shield are quarterly three crescents of the first and fourth, and three scutcheons of the second and third. These are the arms of Seton of Touch. The second shield bears three crescents, which are equally the arms of the Setons as of the Edmonstones. From the Seytons it passed by purchase to the Pringles of Stichel, and became the inheritance of the excellent Walter Pringle of Greenknowe, well-known from his "Memoirs." In the Appendix to the edition of this book by the Rev. Walter Wood, Elie, there is a history of the possessors of this property. The tower was occupied all the days of the Pringles, and Mr Fairholme brought his English wife there, but she could not become reconciled to the rude and inconvenient old mansion; this induced them to repair to Leamington, where they lived all their time. The pasture still shews by the lines of the old ditches and fence backs, the manner in which it had been subdivided. Flowers had lent their adornment. In early spring snowdrops are exceedingly plentiful round the building. There was an inner as distinct from an outer garden; and Walter Pringle in 1663, pointedly refers to "the plum-tree on the north side of the garden-door," as being witness to the earnestness of his devotions.* There is still the line of the winding avenue between two ranks of trees that led up to the tower. The trees in the pasture were Scotch elm, ash, plane tree, lime and willow. The grass has no great feeding

* Select Biographies: Wodrow Society, i., p. 438.

properties, only occasionally a bullock or two being fattened in a season. The stead of Greenknowe occupies a flat, and the cottages are apt to be water-logged. The walkers picked up *Galeopsis versicolor* in the first oat-field entered; and at the pond nearest the stead, *Callitriche hamulata* was observed with leaves abnormally developed, by immersion. *Glyceria fluitans* covered the upper pond almost entirely.

Coming out to the open, the appearance of the land is a sort of central flat, diversified with rolling ridges, and detached *kaims*. It now looked its best, in a variety of tints of green, the small patches of heath that remain untilled being now of small account. The soil is reddish with a considerable proportion of clay in it; the well-rounded gravel on the *kaims* consists of greywacke, basalt, red sandstone, and an indurated reddish white variety of the same rock, such as might be produced by heat. The fences are built of basalt and greywacke. The worst soil is on the flats, being a tenacious clay, while the free fertile soil is towards the heights. Where very light the weeds in the corn are "runches" (*Raphanus Raphanistrum*), and not wild mustard (*Sinapis arvensis*). The river Eden flows down a boggy-hollow, and has upwards the sloping base of the Knock Hill, that shows old cultivated ridges, but is now specked with heath, juniper, and furze. The ground is cultivated and more flat on the eastern side. Higher up is Corsbie Bog, in which the white masses of cotton grass were conspicuous amidst the dark moss hags. The Eden where crossed has a lenient flow. It contains trout, but is overfished. There is a want of dog-roses by the wayside, but near Skinlaws Toll, Mr Brotherston cut a branch of the rare *Rosa micrantha*, for which, hitherto, there have been only two Scottish localities. In going to Bassindean, those who were in the conveyance, passed the dean, where, above an ancient bridge now disused, are the remains of sandstone quarries, that may have communicated the name of Bakstanedean (the dean where bake-stones were procured), to the original Saxon settlement here.

While the walking party were examining the old church of Bassindean, a mean post-reformation structure on an old foundation, the others called at the farm-house, and were shown before the front door, a great sandstone slab, closely resembling others in Gordon churchyard derived from Greenlaw quarry. This

tombstone was removed by a former tenant from the churchyard ; and the popular notion is that it commemorated a "General Leslie," who fell while fighting against Cromwell. Inaccurate statements about the battle of Dunbar may have originated the rumour. They also tell that Cromwell fired from the Knock Hill at Corsbie Castle, which stands upon the opposite side of the Eden. Most of the other old gravestones were used in various parts of the farm cottages some years ago ; the churchyard now being united to the adjacent grass field. At the farm house also was pointed out the aperture of a vault, where the laird of Bassindean who was of the Covenanting party, had been for a time concealed from those who sought his life. The tenants think that the farm house had once been a peel-tower. The re-united company next repaired to the garden attached to the residence of Major John H. Ferguson Home, which stands on a distinct property from the farm. It is well sheltered, and is neat and well cropped. The soil here and all round the mansion house is a stiff clay, but there is as good a crop here of peaches and grapes as anywhere else ; and it is favourable for raising early strawberries and peas. There were some curious varieties of *Mimulus* growing near the entrance. There were some very good *Pyrethrums* in bloom ; and a well flowered plant of *Pernettya mucronata*. Near it was a mass of the dark-foliaged variety of *Ajuga reptans*, which was frequented, as the wild one usually is, by a yellow and black saw-fly, a species of *Athalia*, whose nomenclature is at present in suspense. The bright scarlet flowered *Alonsoa elegans* was grown in the vinery, and likewise a white bloomed pensile species of *Tradescantia*, not a common thing. The apple trees had suffered from the previous winter. The mansion-house is in a state of transition, and will be handsome when completed. Part of it is old, with small windows ; the additions are in the Scottish baronial style. The coat of arms of Ferguson combined with Home is finely sculptured. There is an old dial on one of the aspects, said to be dated 1600. Having been recently planted, some of the shrubs have been hardly dealt with by the inclement winter of 1879-80. *Aucuba Japonica*, the Laurestinuses, and Mahonia were sore cut up. Some elms had also suffered severely. A deluge of rain forced the members to take refuge in the conservatory. This is built on the top of the old peel tower of the mansion, which was

taken down to one story. There were here some very showy Calceolarias, particularly a double mauve-coloured variety; some large blossomed Fuchsias; choice Pelargoniums; a scarlet full-blooming Azalea; a few heaths; a good well-grown Pteris; an Eucalyptus rather drawn up; and a *Sparmannia Africana*, from the Cape, of a large size. There were also noted *Sollya heterophylla*, *Lapageria rosea*, Clematises of sorts, and *Passiflora cærulea*. A portion of the wall of the house was covered by the pedate ivy (*Hedera pedata*). On another portion a fasciculated stem was observed on the *Cotoneaster microphylla*, which is said to be subject to these abnormal growths.

I shall now, by Mr Thomson's aid, follow the more active explorers in their survey of Corsbie Bog. "Despite the drenching rain, Corsbie Bog proved an interesting place for the botanists, who were abundantly rewarded for all their labour and discomfort by the variety of the plants found. The moss has been drained, and when the water receded the soil was the scene of a great network of deep cracks, which still remain. In the Eden, which is here a very insignificant burn, we found a small log of black oak protruding from the soil. On the hill slope, and also in the bog, the juniper (*Juniperus communis*) was growing among the heath, while the cranberry (*Vaccinium oxycoccos*) was plentiful. Lancashire Bog Asphodel also grows in the bog. The butterwort (*Pinguicula vulgaris*) and the sundew (*Drosera rotundifolia*) were common, and the whole bog bore a heavy crop of the hare's tail cotton grass (*Eriophorum vaginatum*). Owing to the rain we could not see this beautiful plant at its best, as the moisture caused the 'cotton' to stick close together, instead of appearing a wavy tuft of down. There was plenty of Devil's bit scabious (*Scabiosa succisa*). The feature of the bog was the frequent occurrence of magnificent beds of *Polytrichum commune* in grand fruit, while *Funaria hygrometrica*, which invariably appears where ground has been burned, was exceedingly rich. In the Eden *Potamogeton polygonifolius* and *pusillus*, *Myosotis repens*, *Sphagnum cuspidatum*, *squarrosum*, and *acutifolium*; *Galium saxatile*, *Ranunculus homæophyllus*, *Carex ampullacea*, *C. curta* and *pulicaris*, *Lastrea spinulosa*, &c., were exceedingly abundant. Some very pretty specimens of *Orchis maculata* were observed. The birds noticeable were the whinchat and curlew, while here and during the day larks innumerable were seen and heard. The subject of

the decrease in the number of larks was discussed, and the general opinion seemed to be that the 'bird of the wilderness' was most plentiful in the wilderness, and receded before cultivation. The rain was still falling, rendering the prospect anything save an 'Eden scene,' and it was determined to return homewards by Knock Hill. Following the side of the plantation of Scotch and spruce firs, it was evident that unless they were quickly thinned the whole plantation would die. The trees were so close that in parts it was impossible to pass through it. It was a hard climb to reach the summit of Knock Hill, but the view from it was an abundant reward. There is a quarry near the top, and a capital section of basalt was there exposed. In an oat field near two men were mowing the tops from the wild radish (*Raphanus Raphanistrum*), which was growing very abundantly. Daisies and buttercups were growing very plentifully in the grass fields. A walk of about two miles under a downpour of rain brought us to Gordon once more, and in good time."

Those who were in the conveyance felt less the discomfort of the rain, and they were well rewarded by the views from the rising ground, as they passed onward to Legerwood. Above the undulating surface, the abrupt prominences of East Gordon, Mellerstain, Hume Castle, and the Knock, were boldly marked out. Before us, dark strips of fir crowned the ridges, or swept down in long lines on each side of the pass towards Birkenside. We got glimpses far away of the Cowdenknows and the Eildons, and more to the north, of the summit of Black Andrew in Selkirkshire. On the left hand the dusky Lammermoors rose like a wall, with streaks of green bog radiating from their sides. The soil on Corsbie, Kirkhill, and Legerwood is of a dark colour, and is well adapted for turnips. It is liable to be infested with quickens, which the rapidity with which the turnip crop is now apt to be put in, does not tend to keep under. The colouring of the lamb's fleeces probably responds to the blackness of the soil; as they were seen to have been recently dipped in a solution of *keel* or red ochre; a practice followed also that the price may be enhanced in the market. Corsbie Moss, which lay considerably below the public road, was once a haunt of the black-headed gull (*Larus ridibundus*), but has been deserted since it was drained. There are a few scattered birches in the moss, and some native sallows on its outskirts. This bog or mossy hollow

sweeps round a far way, till the cultivated ground of Legerwood crosses and occupies the space. After passing Corsbie steading, Corsbie Tower came in view, situated in a field on a knoll among ash trees. It has a certain stateliness about it, and is built of a pale coloured stone. "Three sides of the lofty walls are still complete. It is believed by many who know the locality that Sir Walter Scott must have had this castle in mind when describing Avenel. A few centuries ago it would be totally surrounded by water. It is eight miles, crow-line, from Melrose."* Corsbie Castle belonged to the Cranstons. Jasper Cranstoun of Corsbie was one of the Berwickshire barons proceeded against in 1530, for neglecting to fulfill their bonds "to keep good rule within their respective bounds."† On Sept. 14, 1571, the Earl of Mar writes to Sir William Drury at Berwick, and "complains of spoils committed on the lands of Thomas Cranstoun, the husband of Lady Corsby, and requests him to give orders to the Captain of Home Castle, for redress of these disorders."‡ We then came to a farm place called Kirkhill, which, with its environment of trees, concealed behind it the kirk and manse of Legerwood. The Rev. Archibald Brown very kindly shewed the visitors whatever was worth inspection. The church is a neat but plain structure; new space has been obtained by an addition at the back. Blaikie, the eccentric slater of Earlstoun, covered the church roof all in one morning, single-handed; and it has been so well executed, that not a slate has stirred since. In the interior an old Norman arch of the original church is preserved. The arch is very plain, but massive, formed of red sandstone, and is 15 feet in diameter. The capitals of the pillars are peculiar; one has a transverse parallel double line of stars; and another has an upright elliptical pattern of sculpturing. The pillars had been continuous into the Moristoun aisle, now on the exterior, and roofless. This aisle contains the tomb of John Ker of Moristoun and of his wife, the famous heroine, Grizel Cochran, who robbed the postman near Belford of the warrant for her father's (Sir John Cochran of Ochiltree—concerned with Sir Patrick Home of Polwarth, in the political troubles of the reign of James VII.) execution, and by this means obtained

* Mr James Smail, Introduction to "The Grey Peel, a Ballad."

† Anderson's *Scottish Nation*, i., p. 696.

‡ *Calendar of State Papers, Scotland*, i., p. 328.

delay till successful intercession was made for his life. Over their graves is a flat sandstone with an inscription, and at the upper end an elaborately ornamented bulky tombstone of white sandstone, with the date 1691, and one on each side, the letters I.K. It carries two shields, the first has quarterly on the first and fourth a unicorn's head, and on the second and third three crosses moline; the second shield has three crosses moline,—the arms of Ainsley of Dolphinston. These are intended for the arms of Ker of Moristoun. They agree with those of Ker of Littledean. The epitaph on the slab has been correctly copied for us by the Rev. A. Brown.

“ Her rests the corps of John Ker
of Moristown who departed this
life the 27 of September 1691 in
the thretth year of his age
As also the corps of
Grissell Cochrane his lady
who died the 21 of March
1748 in the 83d year of
her age”

Mr Brown has also copied the inscription on the tombstone of the Montgomeries of Mackbiehill, in the parish, which was pointed out to the members. This family has a history, but it is too long to narrate.

“ Here lyes William Montgomery of Makbiehill who
deceased the 9 day of December 1689 (? 80) his age 63 years
Repaired by the Right Honble. James Montgomery Lord
Chiefe Baron of the Court of Exchekwer the gra
ndson of the above W. Montgomery 179 (3 ? 8 ? 9 ?)”

Copied from the stone in Legerwood Churchyard, August 7th, 1880. The inscription is difficult to decipher. The letters are small and shallow, and the figures especially indistinct.—A. B.

Mr Brown has also sent a correct transcript of the inscription, which has a historical interest, on the tomb of the Rev. William Calderwood, minister here, who was a relative of the Rev. David Calderwood, the church historian.

“ Here lyes that pious and
faithfull servant of Jesus
Christ the Reverend Mr William
Calderwood who was
admitted minister of this
Parioch of Ligertwood June

12, 1655 where he laboured
in the work of the Gospel till
he was turned out for
not conforming to Prelacy
an. 1662 and then he frequ
ently tho' privately visited
that Parioch till the
Episcopal minister was turned
out that he returned to his
work Sept. 8, 1689 and con
tinued therein till his death
which was June 19, 1709 being
the 81 year of his age and
the 54 of his ministry

This monument was put up
by his Relict Jean Trotter

Repaired by some of the Parishioners
1838."

Copied from the stone in Legerwood Churchyard, August 6th, 1880, by
Archd. Brown, minister.

There is an inaccuracy in the epitaph. He had *completed* the
54th year of his ministry, and had advanced *one week* into the
55th. Hew Scott, therefore, is minutely correct in this remark.
His list has *55th year*.

The following is a list of the ministers of Legerwood from the
Reformation to the present period, partly from Dr Hew Scott's
"Fasti," &c. ; and partly collated with a list which Mr Brown
compiled from the Presbytery Records, which contains particu
lars not given in the "Fasti." Previous to the Reformation the
church belonged to the Abbey of Paisley :—

Robert Paterson, reader from 1574 to 1591.

David Forsyth, from Polwarth, 1592.

George Byris, A.M., from Barra, 1593—1640.

Thomas Byris, A.M., 1634-1653.

William Calderwood, A.M., 1655-1662 (deprived).

Thomas Byris, noticed above, 1666 (died 1682).

Gideon Brown, A.M., 1666-1676.

William Layng, A.M., 1677-1689 (deprived).

William Calderwood, A.M., restored 1689. "He died 19 June, 1709,
in his 81st year, and 55th min., having earned a high reputa
tion for sanctity of life and ministerial usefulness."

James Campbell, A.M., from Branton, Northd., 1711; deposed 1 Aug.,
1718.

Thomas Old, A.M., 1717, died 1 Sept., 1737.

Walter Douglas, A.M., 1738-1752.

The following is Mr Brown's list in continuation :—

William Gullan, ordained May 17th, 1753, died April 11th, 1792.

Robert Scott, ordained Sept. 17th, 1793, translated to Coldstream, July 3rd, 1795.

James Baird, ordained Sept. 17th, 1795, translated to Eccles, July 20th, 1797.

James Young, ordained Dec. 6th, 1797, settlement rescinded May 25th, 1798. [He had been minister at Kirkley and Glanton, in Northumberland, but was not qualified according to the laws of the church. He died of a broken heart at Coldstream, 23rd Jan., 1799, in his 43rd year and 18th min.]

Henry Garnock, ordained March 14th, 1799, translated to Canongate, Edinburgh, July 25th, 1811.

George Cupples, ordained March 26th, 1813, translated to East Church, Stirling, Jan., 1834.

John H. Walker ordained Oct. 4, 1836, translated to Greenlaw, Aug. 2, 1844.

James Macnair, ordained Dec. 19th, 1844, translated to Auchtermuchty, July 1, 1853.

James Langwill, ordained Sept. 8th, 1853, translated to Currie, Jan. 21st, 1859.

Archibald Brown, inducted March 31st, 1859.

The company having taken refuge in the church from a heavy shower, Mr Brown read copies of some of these documents, and other statements ; one being an extract from "Pitcairn's Criminal Trials," respecting the slaughter on the lands of Boon, in this parish, by Alexander French, tutor of Thorniedykes, and James Wicht at Gordon Mylne, of John Cranstoun, brother to Patrick Cranstoun of Corsbie, Feb. 10th, 1611-12. Of this I insert a copy made by our President, Mr Watson.

SLAUGHTER.

"1612, March 13.—Alexander Frenche, Tutour of Thorniedykis, and James Wicht, at Gordoun Mylne, his sister-sone.

Dilaittit of airt and pairt of the slaughter of umgle Johnne Cranstoun, brother to Patrik Cranstoun of Corsbie committit be thame upone the grund and landis of Boun in the Merse, upon the tent day of Februare lastbypast, be wounding of him in the heid, leg and dyuerse utheris pairtis of his bodie, to the effusioun of his bluid in grit quantitie : Off the quhilkis straikis and deidlie woundis the said umgle Johnne nevir thaireftir conualessit : bot, upone the first day of Merche instant, depairtit this life, of the saidis hurtis and woundis.

Persewar, Patrik Cranstoun of Corsbie, as brother.

The persewar, be his grit aithe, declairis that he hes most caus to persew : and sueris the said Dittay to be of verritie, and takis instrumentis thair-upoun ; and Protestis for Wilfull Errour, gif the Assyse Acquit. As also

for verificatioun thairof, haifing uset and producet the Depositiones of certane famous Witnesses, quihilk was oppinlie red in Judgement.

Verdict. The Assyse, all in ane voce, be the mouth of Hew Bell in Blithe, chancellor, ffand, pronouncet, and declairit the said James Wicht to be ffylet culpable, and convict of the crewel and unmerciefull Slauchter of the said umple Johnne Cranstoun. And siclyk, for the maist pairts, Declairit the said Alexander Frenche to be ffylet, &c.

Sentence. To be tane to the Castell hill of Edinburgh, and thair, thair heidis to be strukin frome thair bodeis ; and all thair moveable guidis to be escheit and inbrocht to his Maisteis use as convict, &c.”*

A very thriving Deodar and Araucaria were growing in front of the manse. From the elevated height behind the church, there is a view of the Dowie Den Moss Loch or “ Pickie Moss,” where the black-headed gulls or Pickmaws breed ; but to get close to it, a detour had to be made by Legerwood farm-steading. The old village, as appears by the number of ash-trees in a field at the roadside, had stood near the present dwelling. There was a sprinkling of mugwort by the roadside on approaching it. We turned up here sharply to the right, between two fine thorn hedges ; passed the sedge-bordered pond for the supply of the thrashing mill, which is derived from the loch ; then skirted a small planting, where the road curved to go straight up over a hill to Lauder, and having ascended it a short way, the loch, which is full of sedge, and lies in a hidden retired situation, little liable to disturbance, could be seen. The gulls were skimming, backwards and forwards, in wild excitement over the surface of the waters, and then swept away deviously across the country. The young being now reared, the numbers of the birds were lessening by desertions. There is said to be another pond, which they still frequent, at Redpath, below Earlstoun. The gulls have

* Has not this incident given origin to the reported “ fatal fight between the lairds of Boon and Corsbie,” which “ is occasionally spoken of yet in the district ?” According to Mr Smail’s narration : “ The grave of Boon is well-known, and is marked by a large gravestone, of a sort, which is locally called at the present day ‘ the Corse Stane.’ ” The account of this in the “ Statist. Account of Berwickshire,” p. 353, may possibly be more correct. “ On the farm of Boon, in the barony of Corsbie, there is a stone which is called the ‘ Dodds Corse Stane.’ It is a shaft of sandstone sunk into a square block of the same material, and is said to have been the place where a market was at one time held for the vicinity.” In 1576-7, 26th Feb., there was a dispute brought before the Privy Council at Holyrood, about the teind sheaves of Corsbie Mains, for 1676, between George Cranstoun of Corsbie and Cuthbert Cranstoun of Thirlstane Mains and Johnne Cranstoun of Moreistoun his son, which was settled by agreement.

deserted the Dogden moss, since it was drained. In the month of July they often remain all night in grass or turnip fields near Fans.

We again retraced the road to Legerwood. Mr Smail informs me that about this place, there are still great numbers of badgers, and that he is not aware of any parish with so many magpies. Climbing the road that leads to Huntly-wood and the Moristouns, beside a plantation, we looked across at the pretty picture presented by the church and manse, and the field of graves in front, and the clump of sheltering trees. Taking the Huntly-wood road we saw that our late companions had gained the summit of the Knock Hill. There is an old British camp there, which is still traceable by the different colour of the corn, when it is under crop. East and West Moristouns appeared amidst plantations, and Fans in an open between woods, with Cowdenknows and the Eildons in the distance. Huntly-wood is an extensive farm, with numerous attached cottages. We next looked down upon Gordon Moss, and the railway, and across to the Mellerstain woods. A piece of remarkably red soil, as if derived from the Old Red Sandstone, shewed itself on the left before we reached the Greenknowe plantations. Growing in these woods were some fine stately red-barked Scots firs.

One of the results of this meeting was the bringing to light various interesting British relics found in 1836, under a cairn near Gordon which contained about a hundred cart loads of stones. These consisted of a baked clay urn, with zig-zag ornament; two portions of a silver clasp, or hook for fastening clothing; two silver oblong ingots; and a gold ring of plaited wire. These were shewn through the interposition of the Rev. W. Stobbs, and belong to Mr John Hay, Gordon, an ancient villager. Through the agency of Mr J. B. Kerr, these have been sketched for a Plate in this year's "Proceedings." While the late arrivals were viewing these precious remains, Dr Douglas read to these assembled in the inn, from the Club's Proceedings, vol. ii., pp. 5-6, the account of the Club's early visit, June 15, 1842, at which he was present, to Gordon, and the fruitless search then made after the *Linnæa*. There were only five present at that meeting.

After dinner Mr Hardy read portions of a paper on Bassen-dean, and shewed one portion of a transcript of the Baron Court

Book of Stitchel, commencing 1655, the first Court being held by Walter Pringle of Greenknowe in name of his nephew, Robert Pringle of Stitchel; and a notice of the Treasure Trove at Longhope, Selkirkshire, by Mr J. J. Vernon, F.S.A. Scot., Hawick. Mr Vernon's paper was illustrated by drawings of two of the brooches found. The following were proposed and seconded as members of the Club:—Mr Walter Grieve, Cattleshield, Dunse; Dr J. Erskine Stuart, Dunse; Rev. Alexander Phimister, M.A., Gordon; Mr J. Gordon Maitland, Advocate, Procurator-Fiscal for Berwickshire; Dr Haining, Earlston.

Dr Stuart, Chirnside, had an interesting vasculum of flowers, mostly grown by himself. The following were included:—*Reseda fruticosa*, *Aquilegia chrysantha*, *Aquilegia*, "Borderer," a hybrid between *A. coerulea* and *A. chrysantha*, *A. coerulea*, *Silene viscosa duplex*, *Bellium rotundifolium cærulescens*, *Thalictrum adiantifolium*, *Deutzia crenata flore pleno*; *Scutellaria* var., *Viola lutea* (North Italy), *Primula luteola* (Caucasus), *Primula Scotica* (Caithness) *Crucianella stylosa*, and *Violas*—Thyra, Lady Susan Grant Suttie (whites); Tomb Thumb, Rosalind, &c. *Arabis albida* was shewn from the garden wall at Haining, where it had been gathered by the Rev. James Farquharson. Mr Loney brought a fasciculated thorn-stem curved like a crosier. Mrs Dodds, the school-house, Gordon, sent a proliferous stalk of *Plantago major*, which was fruiting like a miniature bush instead of as a single stem; and a number of rib-grass "sports" were also shewn. Mr Brotherston had a specimen of *Barbarea intermedia* from near Belses Station, St. Boswells, and *Mnium affine* in fruit from Newton Don. He explained that *M. affine*, Bland, according to Dr Braithwaite was *M. cuspidatum*, L. not Hedw.; *M. cuspidatum*, Hedw., being *M. silvaticum* of Lindberg. Mr Stevenson exhibited a large fine black-coloured fossil plant, covered with scales, thought to be a *Halonina*, found at Swinton Quarry, and forwarded by Mr J. Chalmers, Swinton. Mr Stevenson also produced a pale grey, almost white, small flint arrowhead, from Chalkielaw; and a small worn-out French copper coin with three fleur-de-lis on it. Mr Wood shewed a farthing of William and Mary, 1694; also a small circular-cupped stone from the British Camp at Torwoodlie. A large hole had been picked in it, but there was none corresponding on the opposite convex side; its diameter was $2\frac{1}{4}$ inch; thickness, $\frac{3}{4}$ inch. It was of greywacke,

and like one of the stones used for chipping flints, already figured in the "Proceedings." A knife dagger, or hunting knife, found on the Piper Hill, Flodden Field, and the property of the Berwick Museum, was also exhibited. Mr Robt. Renton had a key found in Cowdenknowes' dungeon some eight years ago, which is the property of Mr Robert Kerr, joiner, Earlstoun; it is 11 inches long, and has a long pike at the tip. Also, an iron spear-head, 10 inches long (the point broken off) found at Lilliesleaf by Mr John Currie, millwright there, was shewn; and a flat slate spindle-whorl, found by Mr Robert Sharp, Overhewden, on the 26th June, 1880, exactly upon the circle of the "Rings" in the field there, called the Rings field. Mr Renton also shewed several coins, including silver coins of William III., found at Dryburgh; and a number of artificially-fractured flints from Fans, but only one of them had traces of chipping. A cream-coloured lark, it was mentioned, had been caught at Morebattle. A request of Techuiker Charles Kraus, Pardubitz, Bohemia, dated May 29, 1880, for a copy of the Club's "Proceedings," for 1879, was cordially granted.

There is a copy of Walter Pringle of Greenknowe's *Memoirs* of date 1723, in the possession of Mrs Lyal, at Greenknowe. This is the edition that Dr Tweedie reprinted for the Wodrow Society. There is there also a book by — Symson, which has the name *John Pringle* written in it. Three rounded stones from Greenknowe Tower are preserved there—one of greenstone—supposed to have been bullets. They are not so large as cannon balls, and are somewhat oval in shape. A portion of an oak tree stump (black oak) found in draining on the farm, may also be seen.

The third meeting was held at the Blue Bell Hotel, Belford, July 28th. Owing to the exceedingly wet morning, and the wet day preceding, the attendance was very limited. There were present, Mr Charles Watson, President; Mr Hardy, Secretary; Mr Middlemas, Treasurer; Rev. W. Atkinson Clark, Belford Hall; Rev. Edward L. Marrett, Lesbury; Rev. R. Hopper Williamson, Whickham; Messrs C. B. P. Bosanquet and Mr Burn, Rock; George Culley of Fowberry Tower; William Lyall, Librarian of the Literary and Philosophical Society, Newcastle; Edward Wilson and Hindmarsh, Belford.

There were first inspected at Mr Wilson's house, Clark Street,

some flint weapons of the American Indians from Kentucky, which he had brought with him on his return to England, viz., a smoothed hatchet, and a chipped spear and arrow-head. These were characterised as possessing a neck to facilitate their being fastened to the handle. There was a small fernery in the garden that contained a specimen of the Kylvoe Crag *Asplenium septentrionale*, of which one or two tufts had recently been observed by Mr Wilson.

The church was next inspected under the conduct of Mr Hindmarsh. Rebuilt in 1827, it is almost entirely modern. The interior incorporates a Norman arch, of 13th century workmanship; which was discovered last year (1879), when the ceiling was taken from the chancel on its being restored by the Rev. W. A. Clark, and his son, Mr G. D. A. Clark. This arch had been plastered up, and the pillars that supported it had been hewn away. In the inner side of it there is a piece of old dog-tooth carving. During the repairs of the chancel also there were several carved stones discovered built up into the walls. I am informed that the "chancel windows are condemned, and will be also restored in greater harmony with the church."

It was the local idea that this arch had been derived from the old chapel on the Crag, and reconstructed here; but Mr F. R. Wilson's opinion about the age of this fabric is more to be relied on. "From the structural evidence we may see that the ancient chapel, formerly part of the possessions of the priory of Nostill, in Yorkshire, was only altered and not effaced. Some of it is still in situ. The masonry of the present chancel is ancient. New windows have been inserted in it, and buttresses have been placed against it; but the old work of the masons of the middle ages forms the great bulk of it."*

Either this chapel or that on the Crag is referred to as having been in existence when the Inquisition of 1399 was taken, as there is reference to "La Chapelle Rode;" and "Nicholas the Chaplain," then resided in a "cottage" in the town. In Mackenzie's History it is spoken of as having been erected in 1700.† But according to Archdeacon Sharpe's Notes in answer to Horsley's Queries, it is said, that "anciently this was a chapel to

* The Churches of the Archdeaconry of Lindisfarne, p. 85.

† Hist. of Northumberland, i., p. 398. "It was built in 1700 and seated in 1759."—Wallis, Hist. Northd., ii., p. 415.

Bambrough, like Tughall, Lucker, and Beadnell. It was for many years in ruins, but rebuilt by contributions. It did formerly belong, as the tithes of the whole parish of Bambrough did to the Priory of Nostell.”* At the dissolution it became an impropriation in lay hands.† The chapel of 1700 was thus a renewal of a much older structure on the same site. Similar is the testimony of Mark’s Survey, 1723. “The church is small, but handsome, and well built. It was repaired but lately in the year 1701 by the pious contributions of the following honourable contributors :—the Hon. Charles Montague, who gave £50, and the Right Hon. the Lord Tullibarden £40, towards the repairing or rebuilding the church of Belford. The rest was done at the charge of the parishioners or inhabitants of the parish.”‡

The history of the lords of the manor of Belford as given by the late Mr Dickson, in the Club’s Proceedings, vol. iv., is incomplete after the year 1663 (p. 24), and has been supplied by Mr Hodgson Hinde.§ “In 1663 ‘the Lady Forster of Blanchland,’ widow of Sir Claudius Forster of Bamburgh, is returned as the proprietor, but shortly afterwards it was in the possession of Francis Forster, of Easington Grange and Belford, a member of the Adderston branch of the Forster family. See Forster pedigree in Raine’s ‘North Durham.’ He left an only daughter and heiress, Elizabeth, married at Durham (see Cathedral Register), September 3rd, 1685, to Charles Montague, fifth son of Edward, first earl of Sandwich, afterwards the husband of Sarah, daughter of John Rogers, of East Denton, near Newcastle. The issue of this marriage was an only son James,” who in 1727, sold Belford to Abraham Dixon, a merchant of Newcastle-on-Tyne. It was his son, Abraham Dixon, Esq., that raised Belford into consequence.

* Nostell or Nestelhoo Priory near Pomfret, Yorkshire, was founded in 1120, by Ilbert de Lacy and his son, for St. Austin’s Canons. In 1137 a cell subordinate to Nostell was founded at Bamburgh, and the churches of St. Aidan and St. Oswald there were conferred on that priory, which was dedicated to St. Oswald, a Northern Saint. Belford, as dedicated to St. Mary, appears to have had a Norman founder, but there may have been an earlier chapel there appropriated to Bamburgh.

† Inedited Contributions to the History of Northumberland. By J. Hodgson Hinde, Esq., p. 63.

‡ Ibid, p. 72.

§ Inedited Contrib. to Hist. of Northd., p. 72.

The door studded with large-headed nails, which admits to the grounds of the hall, came from the old or West Hall. The trees here are very stately and well-grown, especially the elms, Spanish chestnuts, ashes, and beeches. There is a fine line of hollies, which present the deceptive appearance of a raised bank, that shelter the northern aspect of the house. In the verandah, is an upper mill-stone or quern of trachyte, 14 inches in diameter, apparently Roman, and said to be from the vicinity; there were other mill-stones present; and a white freestone excavated like a cup, which may have been a holy water vat from one of the chapels. Stone querns are said to be rather numerous about Belford, being found here and there in cultivating the fields. The entrance hall is ornamented in part with curiosities and cases of stuffed birds. The pair of bronze spurs discovered in one of the moats of old Belford Castle (now West Hall farmhouse), accompanied with human bones, of which the account by the late Rev. J. D. Clark is contained in the Club's Proceedings, vol. iv., p. 89, are preserved here. It is said that in another place, some perfect teeth, along with knives and armour were obtained. A part of the bird collection is local. A woodcock was pointed out, with white wings, which had been shot by one of the family at Blaydon, in December, 1879; also there were a couple of Pallas' Sand Grouse (*Syrrhaptes paradoxus*) from the coast near North Sunderland; and a pale-coloured mule pheasant, between the common and a Bohemian, that had strayed from Eslington, and been shot on the Belford estate. Among the paintings in the drawing and sitting rooms, are a couple of Morland's, several sea views by Carmichael; and two excellent views by Richardson of Holy Island Priory and Bamburgh Castle.

The Rev. W. Atkinson Clark now headed the party to traverse the grounds. Two very large hornbeams, which had become ample trees, drew attention; and also a grand American elm. Some of the beeches have spirally-twisted stems, which is attributed to the wind. Near the turret pond were two trees of *Quercus Ilex*, which are considered to be the finest in the North of England. Those at Howick Hall, seen last year, appeared not to be far, if at all behind them. In this pond, a sort of "Dismal Swamp," amidst water coloured like ink, some water lilies grew. The *Myrica Gale* from the upper moors had been planted near it.

The walk led round amid the intervening tall trees, to an outbreak of trap-rock, which has been converted into an excellent fernery, well adapted to the growth of native species. There were noted, *Lastrea Filix-mas*, *L. cristata*, *L. dilatata*; *Athyrium Filix-femina*; *Asplenium Trichomanes*, *viride*, and *Adiantum-nigrum*; *Cistopteris fragilis*; *Allosorus crispus*; *Polypodium Dryopteris* and *Phegopteris*; *Polystichum aculeatum*, and the dentated and proli-ferous forms of *P. angulare*. Finest of all, the varieties of *Scolopendrium vulgare*, especially *crispum* were at home here in the shade. No where could be found more luxuriant plants of the holly-fern, *Polystichum Lonchitis*, usually so prone to pine away when transplanted. On the upper part of the crag, which is called the Turret, there being a small prospect tower on the rocky platform, the maiden pink (*Dianthus deltoides*) grows native. *Erinus Alpinus* has been here introduced, and thrives in the chinks of the Turret, and has a tendency like *Cotoneaster microphylla* alongside of it, to cling to the wall.

The Coniferæ were thriving; one of these was a good *Abies Cephalonica*; the Araucarias were not old. The frost had done no harm here. There were several good trees of *Quercus Cerris* or Turkey Oak.

The garden was a most acceptable treat, but very little time could be devoted to the extensive greenhouses, and spacious flower borders. The white flowered creeper, *Stephanotis floribunda*, the ornament of bridal parties, was profusely blooming; a pretty pink *Polygala* like a pea, was very attractive; but the speciality was the rich assortment of ferns, of which Mr Clark was an assiduous cultivator. Of native kinds, *Asplenium marinum* had grown to a large plant; *A. Ruta-muraria* was thriving in a pot; and *A. germanicum* also. A specimen of *A. lanceolatum* had been brought from Garibaldi's Isle, Caprella; there was a very fine *Woodsia Ilvensis*; and *Polystichum Lonchitis* was thriving under cover. Only one of the richly furnished herbaceous borders was glanced at. Mr Clark said that the old Cabbage Rose had now come into vogue in the South, and was all the rage; and he showed some fair examples; *Lilium auratum* was noted, as well as a small upright Clematis; a large flowered variety of *Lythrum Salicaria*, coarse but showy; a very fine Statice; *Veratrum nigrum*; St. Barnaby's thistle; double *Geranium pratense*; the old Golden-rod and pearly Everlasting; curious forms and colours of Monkshood; great white Spiræas, &c.

There are several good old plants preserved by the sides of the walks. On the west side of the house there was a wide-spreading Portugal Laurel, notable for its height as well as its bulk; also a large Medlar bearing fruit. Finally the company confronted a tall upright Spanish chestnut, the pride of the place, which close at the ground measured 13 feet 4 inches, at one foot from the ground 12 feet; and at six feet, 10 feet 6 inches. There is an extensive rookery in the park.

The party now left the park for the Crag, entering by the private walk. There was an extensive display of the trap here in a quarry, which the proprietor is obliged to keep open to supply the roads with metal. The stone had also been applied to building purposes, but was not very tractable. A very large birch grows in the adjacent plantation. A white fox-glove appeared on the bank. On the grassy platform of the Crag, the foundations of the oblong chapel were first examined; fragments of lime and limpets from the mortar are extensively strewn about. It has been fortified or enclosed by some high mounds, but these may be more ancient. After a lower interval a British camp occurs, with strong ramparts. Near it are several depressions which a rainy season would readily convert into pools. There is an old sloping footpath from the north-west side, by which access to the chapel could be obtained. The chapel may have been connected with the neighbouring old hall. Previous to the time when Mackenzie's *History of Northumberland* was written (2nd edition, 1825, vol. i., p. 400), it was better worthy of a visit. "Near this town on a rising ground, are the ruins of an ancient chapel, which, being surrounded by several tall oak trees, had a most romantic appearance; but the trees are now cut down and the stones removed. On the north-west side, by a fine spring, stood the ancient mansion-house, behind which was formerly a wood of large oaks, half-a-mile in length, which stretched under a range of steep rocks of whinstone."* According to Mark's Survey, 1723, this chapel was dedicated to St. Mary,† and called by her name; the present parish church, it may be remarked, appears to have borrowed the patron saint. Whether "*La Chapelle Rode*" of the Inquisition of 1399,

* This is mentioned in somewhat similar terms in Wallis's older *Hist. of Northd.*, ii., pp. 415-6.

† *Contrib. to Hist. Northd.*, p. 72.

belonged to this, or the old building forming the chancel of the parish church, I cannot decide ; but an ancient well, called St. Mary's well, there indicated must have been near the chapel on the Crag. At that date, Elizabeth, widow of Philip Darcy, had as part of her dowry, "a certain part of the wood towards the east, to wit from Seynt Mary Well as far as La Close noke, and leading from La Close noke as far as La Chapelle Rode." This well may have supplied water for the font or ceremonial lustration. Such was once the custom in North Wales.* "St. Mary's Well," I am informed by Mr John Aitchison, "is situated less than a quarter of a mile from the north end of the town of Belford, on the site of the turnpike road leading to Berwick. It is no great distance from the old site of St. Mary's Church on the Crag. It is a fine, strong spring of water, and appears to have been at one time well kept. I have heard my mother, who lived over 82 years in Belford and its immediate neighbourhood, say that this well, in her recollection, supplied most of the people in the north end of the town with water ; that it was walled up on each side, and covered over with a large stone on the top ; and that two 'ladles,' fastened by chains to the sides, were always kept there for the purpose of passers by getting a drink when they required. Of late years, however, the well has been removed from the side of the road into the other side of the hedge, in the corner of a field, where it is still to be seen, and where, I believe, the people living at the Chesters farm still draw from it what water they need."

Mr Wilson pointed out a place in the fields in a hollow, on the west side of the Crag, where an urn had been found in a grave three feet long. In deep ploughings graves are struck, in scattered positions, but no record is kept ; they are usually empty. Adders (*Pelias Berus*) are numerous on the Crag, and in the woods at the back of it. Mr John Aitchison, Belford, informs me that they are found at Penniheugh, Layheugh, Coal Wood, Belford Moor, and other places on Belford estate.

The view was extensive, but dimmed by the moisture in the atmosphere, and included Holy Island, Bamburgh, the sandy shore at Budle, and the inland range of high moorland ground. A farm named *Chesters* lies at no great distance, and there is a camp on the estate of a square form called the "Derry Camp." We heard of no other antiquities of this class.

* See Pennant, in Brand's Pop. Antiq. ii., 227, 228.

Rain threatening, it was found impossible to prolong the journey, as had been intended, across the country; a retreat was then made to inn, and four of the party were obliged to leave.

At length the rain cleared off, and the remaining few took advantage of Mr Leather's obliging offer of opening Middleton Hall on the Club's behalf, but the time that remained barely sufficed for a hurried visit by conveyance. The private grounds are beautifully laid out and embellished. The handsome house is new, but is constructed on the site of an older residence. The ribbon and bedding-out style of gardening is adopted, but there is still a portion of perennial plants spared. No harm had been done by the winter except to a climbing *Ceanothus*, on the front of the house; and the tea-roses had been blasted, but were springing anew. There was a pretty little fernery. The showy form of *Lythrum* appeared here again, and there were quantities of the common throat-wort (*Campanula latifolia*). A rivulet is conducted through the garden, and the walls that confine it are prettily decked with ferns and saxifrages, springing out of the interstices. *Cistopteris fragilis* and *Asplenium Ruta-muraria* were flourishing. There was an excellent display of grapes and peaches. The potatoes and peas were pronounced good. The black currants had suffered much from *Aphis*, a general complaint.

A hasty survey was made of the principal apartments in the house; there were some rich carved mantlepieces and side-boards, and valuable cabinets. The ceilings were superbly decorated with geometrical designs. Some of the wood work was by Signor Bulleti. Among the paintings was a very good view of Bamburgh Castle, by our corresponding member, Mr T. H. Gibb, Alnwick.

The Library was rich in the county historians, including Hodgson's Northumberland, Surtees' History of Durham; Raine's North Durham; and all Mackenzie's Histories of Northumberland, Durham, and Newcastle, fully illustrated and increased to double their size; a good copy of Bewick's Birds; and a third edition of Shakespeare, 1664.

In the lathe room were three iron-bullets; one large and one small, had been extracted from the wreck of the old house when taken down; the other a small one was from Holburn. There

was also a bronze celt. The cover of a cist—a sandstone flag with rounded edges, about 4 feet long and more than 2 broad—found at Holburn, on the estate, was lying outside. It had contained an urn, which is in Canon Greenwell's collection. I am informed that the badger has found a place of security in Detchant wood ; Mr Leather having given directions for its preservation.

Only eight dined. A letter to the Secretary was read from Miss Russell of Ashiesteel, which accompanied two photographs on a large scale, of portions of the Catrail, that she had been at the expense of getting taken by an Aberdeen artist, to present to the Club ; and for these and the interest she has taken in the Club's welfare, a vote of thanks was directed to be sent to Miss Russell.

Notices of the hurtful Effects of the past Winter on Vegetation were read from correspondents. Mr Culley of Fowberry spoke of the sad disaster that had befallen the shrubs and trees in his grounds and round his mansion ; and he had brought some extraordinary oak-leaves both for size and shape, which the death-stricken trees had pushed out to retrieve their condition. One of these measured $10\frac{1}{2}$ inches long by $6\frac{1}{2}$ broad ; another $7\frac{1}{2}$ long by 7. They snapped off at the junction with the stem, with a bulb attached, and were cast to the ground like decayed branches ; a form of vegetable irritation. The oaks and yews had suffered most at Fowberry.

A paper containing extracts from old Inquisitions about Belford manor, and its subdivision among heirs and heiresses, was read.

On the previous evening the late Rev. William Procter's MS. History of Doddington was examined, and a portion relating to Earle, Ewart, Humbleton, and Nisbet, was selected for the Club's use, which Miss Procter has since been so kind as to transcribe.

A letter was read of date July 10th, from Mr G. H. Thompson, Alnwick, containing the information that he had purchased, some three years ago, from a countryman, an old brass pot, of the short three legged type. It differed from modern pots in the junction of the casting being oblique, and not upright. The width at the top was $7\frac{1}{4}$ inches ; the height 8 inches, and it was very heavy. It had two ears for suspending it on the crook. It had been either ploughed or dug up in the vicinity of Newham.

On its being afterwards exhibited by Mr Thompson, at Morpeth, it was found to correspond very closely with that figured by Miss Stirling for the "Proceedings."

Mr Watson exhibited a nest of the long-tailed Tit (*Parus caudatus*), which had been found in a furze bush at Chapel, near Dunse.

The Rev. Mr Maclean, Allanton, was proposed as a member.

Belford is an exceedingly quiet place ; there is no stir in the streets in the evenings ; and the bat flutters undisturbed amid the grey dwellings. In the olden times the houses were covered with heather and sods, and the place being liable to be burned by the Scots, was very poor. In the reign of Charles I. (1639) it was in a state of declension. "Belfort nothing like the name either in strength or beauty, is the most miserable beggarly town or town of sods that ever was made in an afternoon of loam and sticks. In all the town not a loaf of bread, nor a quart of beer, nor a lock of hay, nor a peck of oats, and little shelter for horse or man."* Mark, 1723, says "the village appears but poorly, and many of its houses ill-built." There are no longer any of the "clay-daubed" cottages of 1639.

There is a tradition that on one occasion the town was visited by the plague, and the bodies of the dead were buried in their wearing apparel on Belford Moor. Fragments of the dresses have been dug up there by people who attempted to disturb the tombs, in hope of finding coins in the pockets. Another circumstance of the same visitation has been preserved in memory. When the plague reached the village of Ancroft, in North Durham, it was then inhabited by a colony of "cloggers." When any were seized with the disease, they were carried out to a hill face, which was overgrown with broom, out of which little bowers were constructed, under which the victims were laid till they died ; and then both the hut and the body were consumed with fire.

Among Mr Culley's birds preserved at Fowberry, which I saw on this occasion, the following are of interest, as belonging to the neighbourhood :—two smews (*Mergus albellus*) shot by him on the Till ; two goosanders (*Mergus Merganser*) ; and two water-rails (*Rallus aquaticus*), which are rare. There are two bitterns (*Botaurus stellaris*), both shot on the estate ; and Mr Culley had

* Court and Times of Charles I., vol. ii., p. 285.

lately heard the boom of the bittern on the Till. There were three common buzzards (*Buteo vulgaris*); and the honey-buzzard (*Pernis apivorus*) had also been seen there. A nest of the kingfisher along with the bird, has also local interest.

The fourth meeting was on August 25th, at the Queen's Head Hotel, Morpeth, for Newminster Abbey and Mitford. There were present—Mr Charles Watson, President; Mr Hardy, Secretary; Revs. Thomas Rogers, precentor of Durham Cathedral; J. Hill Scott, Kelso; R. Anchor Thompson, Newcastle; and R. Hopper Williamson, Whickham; Messrs Thomas Arkle, High-laws; Henry Hunter Blair, Alnwick; James Bogie, Edinburgh; Robert G. Bolam, Berwick; M. G. Crossman, Berwick; James Fergusson, Morpeth; James B. Kerr, Kelso; A. G. Legard, H.M. Inspector of Schools, Leeds; Adam Robertson, Alnwick; Stanley Hill Scott, Kelso; George H. Thompson, Alnwick; John Thomson, Kelso; and William Wilson, Berwick.

Morpeth is an agreeable place for holding a meeting. It is a town of considerable antiquity, and it is picturesquely placed amid the shelter of a background of trees; closer to it are cultivated fields, market gardens and orchards, and spacious nurseries; an unpolluted stream encircles it; several of its public buildings and quaint hostelries remain unimpaired; it has a well-kept old church, and the ruins of a castle; with much to commend in its modern edifices; the sylvan banks of the Wansbeck afford a succession of pleasing and varied views, and contain many lovely retired spots where Natural History researches may be prosecuted undisturbed; while in the juxtaposition of monastic sites, ruined fortresses, village churches, family mansions, and rural villages, we have a closer combination, within narrow compass, of the past with the present, than few other places can offer.

It was within this charmed circle that the Club now took its journey. During the preliminaries for starting, some of the more remarkable buildings in the town were scanned. There is an old chantry at the end of the wooden bridge over the river; a clock or bell-tower near the market place—once the town-jail it is supposed—at least it was the depository of the town-stocks;* the old Grey Nag Inn, in Newgate Street, whose Elizabethan front has fortunately been preserved during internal repairs, to

* In 1668, was presented in the Court-leet, "the necessity of pillory and cucking stoole." (Hodgson).

instruct posterity about the aspect of things long ago; and the Queen's Head, our head quarters, contains many capacious ancient rooms with low ceilings. It is the Morpeth tradition, as we learn from a tractate written by Mr Fergusson, "that it was at the Nag's Head that John Scott (afterwards Lord Eldon) and Bessy Surtees slept on their way back from their runaway Scotch marriage;" although Lord Campbell alleges that it was at the Queen's Head. Collingwood House was occupied by the great admiral of that surname, who, when freed from official duties, delighted to spend his leisure there, and be recreated by the sweets of its garden. Bunker's Hill is a memorial of American warfare. The modern church of St. James was visited. It is a large and massive structure, in the modern style of Norman architecture. Its stained glass windows representing scriptural scenes, are very ornamental. There is an elaborate frescoe in the apse of the Incarnation of the Eternal Word, and there were two fine oil paintings of "the Scourging," and "the Walk to Calvary." It was approached by a fine avenue of limes.

Part of the members drove to Newminster and Mitford; the rest walked under Mr Fergusson's skilled guidance. After crossing the river by the west bridge, the High Stanners by the river side were passed. The Low Stanners are on the low ground at the eastern outskirts of the town. There are Stanners also both at Warkworth and Hexham. *Staners* are the small stones and gravel on the margin of a lake or river. The walk by the river side still bears the name of the Lady's Walk, being the way that led to the monastery of Newminster, which was dedicated to the Virgin Mother. *Myrrhis odorata* and *Carex pendula* grew by the side of the path. To reach the site of Newminster, the party traversed the Lover's Walk, which adjoins the abbey lands. A few large beeches survive, of what was once a long one-sided avenue. These have short principal and numerous secondary stems, and hence it was concluded that they are the remains of an old beech hedge. Trees, mostly ashes of large dimensions, are scattered over the area of the field containing the abbey ruins. This is a triangular sheltered haugh on the south side of the river, whose level is broken up by the mounds of ruined buildings spread over much of its space. Of these, till the recent excavations, only a solitary arch of the northern doorway, of 15th century origin, maintained its solitary position.

Hard by it is a venerable ash-tree, of vast bulk of stem, but stunted by storm and age; which measured 14 feet in circumference at five feet from the ground.

The plan of the buildings, according to the Rev. J. T. Fowler, in his Introduction to the "Chartularium de Novo Monasterio," published for the Surtees Society, 1878, was almost identical with that of Fountains, in Yorkshire, of which it was the first born daughter, "as originally laid down, and closely corresponding to it in dimensions." There had been some previous excavations on or near the site. "In digging for limestone in the vicinity, coffins both of lead and stone have been discovered."* "Mr Woodman dug into the chapter-house some years ago, and found some fine Transitional capitals, and portions of vaulting ribs, now preserved in his garden. They are extremely characteristic examples of early Cistercian work. The floor was found laid with small black and red tiles, and some fragments of ruby glass appeared among the debris."† Mr Fergusson of Morpeth, who has made the subject his particular study, gave the members an account of the explorations instituted two years ago by the Archæological Society of Durham and Northumberland, and pointed out the sites of the various parts of the sacred building, adding no little interesting information respecting the purposes which they served in the religious and moral economy of the edifice. To him I owe the following summary:—

"Excavations at Newminster Abbey were carried out in the summer of 1878. The cost was met by subscription, and the work was conducted under the personal direction of the Rev. J. T. Fowler of Durham; Mr W. Woodman, Stobhill, Morpeth; and Mr T. W. Middlemiss, Borough Surveyor, Morpeth. The work was done most effectually on the site of the Chapter House, which was thoroughly cleared of *debris*, several feet in depth. It was found to measure forty feet by fifty. The lower corners of the door jambs were found *in situ*; the ribs of the vaulting and the corbels from which it sprang were discovered; and the bases and part of the shafts of three of the four pillars were found in position. Portions of the floor, formed of paving-tiles fitting into geometrical patterns, were laid bare round the base of one of the shafts. Towards its eastern side an empty stone coffin

* Mackenzie's Hist. of Northd., ii., p. 202.

† Chart. Nov. Mon. Introd., p. xiv.

was met with. A considerable part of the Choir of the Church was cleared out, and the site of the High Altar—measuring 13 feet 5 inches by 5 feet—was disclosed, and in front of it an empty stone coffin much mutilated. No evidence of the east wall of the church was obtained, but at a point, probably just outside of it, a small stone coffin containing a skeleton was come upon. In an extensive trench, dug length-ways in the north transept, four incised slabs were cleared out, along with three stones of a respond. One of the slabs had only a cross, a second had a cross and a pair of shears; a third a cross and the words ‘JOH’ES DE LA VALE,’ and the fourth a cross with the word ‘TOMAS’ and a surname, the only portion of which that could be deciphered was ‘SUN.’ On the stones of the respond was the nimbed figure of an ecclesiastic in proper vestments. The excavations at the west end of the Church revealed several points of interest, but the work was not carried far enough to allow of an accurate conclusion being come to regarding their exact design and character. The work was discontinued through lack of funds. To make a complete exploration of the entire site would require about £200. Mrs Blackett Ord of Whitfield, has granted leave for the work to be done, subscribed towards the expense, and promised to protect whatever of interest is laid open.”

A piece of Purbeck stone was pointed out, as being the fragment of a stone lettered “LAUS DEO.” The other slabs are local sandstones; one is known by its large grit. These tombs were broken by the fall of the roof, when the monastery was rifled in the time of Henry VIII. The wall at the high altar was also crushed, and a pillar base was twisted. There is part of a pillar still *in situ*.

Documents do not preserve the names of many of those who were privileged with burial within the sacred precincts. St. Robert, the first Abbot, was laid in the north transept; and his tomb had eight wax candles burning before it.* Ranulph de Merlay, Lord of Morpeth, who founded the Monastery in 1138, was buried along with Juliana, his wife, daughter of Cospatrick, 2nd Earl of Dunbar, and Osbert one of their sons, in the northern part of the chapter-house.† His son, Roger the first, was interred with his father; and his son Roger, the second, was

* Chart. Nov. Monast., p. 238.

† *Ib.*, p. 270.

laid in the cloister at the entrance of the chapter-house;* while of Roger the third, who died A.D. 1265, it is recorded that he was entombed near his father;† and with him departed the male line of the de Merlays. The barony came to his daughters and co-heirs, Mary and Johanna. Mary married Thomas, Lord Greystock; and Johanna, Robert de Somerville. John, Lord Greystock, succeeded his father Thomas, but having no issue, Ralph Fitz-William, his near kinsman, was his heir, and assumed the name and title. His grandson, Ralph, Lord Greystock, who was poisoned by the contrivance of the accomplices of Sir Gilbert de Middleton, at Gateshead, 13th July, 1323, was buried at Newminster.‡ His grandson, Ralph the III., Lord Greystock, was taken prisoner in 1380, at “Horsridge in Glendale,” along with William de Aton, and many potent men, by George, Earl of Dunbar, and carried prisoner to Dunbar. His brother William, being exchanged as a hostage for him, caught a pestilential disease there, died and was buried at Dunbar, but after two full years his body entire in the flesh and skin was translated to Newminster, and buried before the high altar beside Margery, lady of Ulgham.§ The historian, Wallis, has preserved the original of this information, and both Mackenzie, *Hist. ii.*, p. 198, and Mr Fowler, *Introd. Chart. N. M.* p. xix., have misunderstood it, so far as to make Ralph the victim of the fever; whereas he was ransomed, and died in 1417. The Lord Robert de Umfravill, Earl of Angus, died on the 12th of April, 1327, and was buried near the high altar.|| In the year 1436, on the 27th January, died the Lord Robert de Umfravile, knight, Lord of Kyme and Redesdale; and in the year 1438, on St. Silvester’s day (Dec. 31), died the lady Isabella, wife of the aforesaid Lord Robert Umfravile, and they lie together at the altar of St. Mary Magdalene.¶ This is “Robin-mend-the-Market.” He married the widow of Sir Robert Umfraville, brother to Gilbert Earl of Angus. The monks accorded to their great benefactor, Patrick, the son of Edgar called Unniying, the son of Cospatrick, who had gifted them with Werihill or Wreighill, in Coquetdale, along with his body, a letter of fraternity to him and his wife, to receive them to be buried when they died, and they agreed to

* *Chart. Nov. Monast.*, p. 271. † *Ib.*, p. 281.

‡ *Ib.* pp. 294, 305; not Newcastle as Mackenzie has it, *ii.*, p. 198.

§ *Chart. Nov. Mon.* p. 298. || *Ib.* p. 304. ¶ *Ib.* p. 303.

conduct the same service for them as if they had been two monks.* John the son of the aforesaid Patrick de Kestern, granted them land in Caistron along with his body.† His son John, still more generous and facile, sold to Newminster both Caistron and Werihill. All these, as well as their ancestor Edgar, were written among the benefactors of the house; as well they might, after their noble estate had been nibbled away gradually, and then swallowed up by the rapacity of their spiritual guides.‡ Hugo de Lakenby also gave them 21 acres of land in the vill of Edington, with his body.§

The possessions of the abbey were valuable and extensive, comprising numerous lands on both sides of the Wansbeck, or in the adjoining district; vast tracts on the Coquet, including Kidland, lands in Kestern, Flotwayton (Flotterton), Bitelisden, Scharbirton, Stretton, &c.; two pits or drifts for extracting sea-coal; salt works near the mouths of the Blythe and Coquet; fisheries on the Tyne; houses in Newcastle; Chopwell on the Derwent; lands in Filton, Tolland, and Swinburn, in Chollerton parish; the advowson of Whelpington; peat moss at Edlingham, &c., &c.¶ The value of their property has been estimated at £20,000 per annum of the present money.

The young plants of *Verbascum Thapsus* or mullein, and the common Celandine (*Chelidonium majus*) seen about the ruins are perhaps survivals of seeds that may have retained their vitality since the buildings became covered up with soil.

The old north road from Newcastle, passed by the west side of the abbey; the bridge by which it crossed the river has now ceased to exist. The abbey grange stood at the end of the bridge.

From its propinquity to the public road, there was a friendly resort to it, by the royal army, and noblemen and others both from England and Scotland, which was felt to be very burdensome. In Jan. 5, 1300, Edward I. directs from it by brief of Privy Seal, a commission to Lord Saint John to receive the men of Annandale to the king's peace.¶ Edward II. dated public documents from it, Sept. 8th to 11th, 1310; and on May 29 to 31, and from June 1 to 12, 1314, and on Aug. 7, 1322; and

* Chart. N. M. pp. 118-120. † p. 121. ‡ Ib. pp. 140, 146; 301.

§ Ib. p. 166 ¶ Charters, passim.

¶ Historical Documents, Scotland, ii., p. 409.

Edward III. tested a mandate here Nov. 16, 1334.* In 1502, Margaret, eldest daughter of Henry VII., then affianced to James IV. of Scotland, on the 26th July, was conveyed with a fair company to Morpeth, "and by the towne passed in fayr order, wher ther was much people; and so sche went to the abbay, wher sche was well recyved by the abbot and religyous revested, at the gatt of the church, with the crosse." She returned to Morpeth to her lodgings for the night.†

Among the "Historical Documents, Scotland," i., p. 391, there is an extract from the Roll of the Justices Itinerant for Northumberland, Jan., 1293, concerning "Pleas North of the Coquet," which is curious now. A certain Ralph, a lay brother (*frater conversus*) of Newminster found William the Pundere, in a certain osiery (*virgulto*) of the Abbot of Newminster cutting wands, and struck him with a certain axe (*hachia*) on the head, so that by reason thereof he died on the instant. And thereafter the said brother Ralph was sent to Meuthros (*Melrose*) in Scotland, by the Abbot of Newminster, which abbot is now dead. And the said brother Ralph withdrew himself for no other cause than the foresaid death, and is of evil credit. Therefore he is banished and outlawed. He has no chatells. The Rev. J. F. Fowler, *Introd. to Chart.* p. xix. conjectures that the monks cultivated osiers for basket-making, as did their neighbours, from the mention in a deed, *Chart. Nov. Mon.* p. 160, "of the vimina of John de Kestern." We have here a case in point. The *Virgultum*, however, may have been a hazel shaw.

Mr Fergusson pointed out how the Abbey was supplied with water, but this was known previous to the excavations, and Mr Fowler's instructions may be depended on. "Somewhat to the south-west of the Abbey," he says, "and within the curtain wall, tanks of oak and lead lie buried; these were in connection with a fine spring of water. The great sewer for sanitary purposes, which also turned two or three mills, was an artificial water-course taken off from the Wansbeck about a mile and a half higher up, where a weir or dam was put across. This water-course can still be traced through a considerable part of its

* *Rot. Scot.* i., pp. 94, 103, 127, 128, and 294 (Hodgson); and Harts-horne's *Itinerary of King Edward the Second*, pp. 7, 13, 17. (Privately printed).

† Leland's *Collectanea*.

length, and for some distance contains a briskly running stream of surface drainage. Near the abbey it was conveyed in an arched conduit of stone about five or six feet high; this has been destroyed within the last few years, together with the original oak frame of the sluice by which the admission of water was regulated.”* This water from the Wansbeck is believed to have anciently filled a fish pond near the abbey. At one time there prevailed a firm impression in the minds of the people around that the abbey was connected with Morpeth Castle, and the opinion gained strength, when the culvert or arch—long since silted up—was come upon in the recent operations, it being carried, as it were, straight in the direction of the castle.

Leaving Newminster we followed for some distance this ditch, till the public road was regained. Rank beds of the butter-bur (*Petasites vulgaris*), which William Turner, the old Morpeth botanist, says, was in his time “called in Northumberland, an Eldin,” grew on its banks. This plant is still known as an “Ell-docken,” at Kirkwhelpington. The fine beeches that we saw after leaving Morpeth were remarkably well twigged and leafy. But now, several of the oaks and ashes had put on a second crop of foliage, which was still flaunting the pale brown, yellow, red and green tints of immaturity. These were recoveries from frost bite, consequent on a vigorous flow of summer sap, of the half-ripened twigs of last season. Sometimes these had snapped off, and new buds originating beneath the bark pushed out fresh shoots or tufts of leaves. The Wansbeck here flows over beds of sandstone, and the water is very limpid. Sandmartins were flying over the water, and a single young pied wag-tail was walking along the rocks. The dipper was expected to put up its appearance, but was invisible. In Turner’s time the “Morpetenses,” called it the “water-craw.”† A very miniature leaved maple was noted as a singularity, as we turned towards Mitford. Spital Hill stood on the height on the right hand, occupying the position of St. Leonard’s Hospital, founded by Sir William Bertram, in the reign of Henry I. This was a distinct institution from the chapel of St. Leonard, near Mitford, which in 1491, when in a waste state, was conveyed with a cottage in Benrige, and other tenements and lands to Newminster.‡ It

* Introd. to Chart. Nov. Mon. p. xv.

† Rambles in Northumberland, p. 49. ‡ Chart. Nov. Mon. p. 249, etc.

was hereabouts that the canal conveying water to the abbey crossed the Wansbeck by a wooden tube, of which the olden people recollect the two ends sticking out of the bank.

I now adopt a part of Mr Thomson's report:—"It was specially noticeable that in the valley of the Wansbeck apples and pears were much more plentiful than they are on Tweedside. Some of the trees were heavily laden with small though tempting fruit. The birch and the hawthorn, as well as some branches in chestnut trees, were observed to be colouring, and assuming their autumn tints. The Font joins the Wansbeck at this point, being about as full in volume as the main stream. The Font is presently spanned by a fine old single arched bridge. [The pool above the bridge is used for washing sheep.] Mitford village, consisting of a few pretty cottages, was once a more important town than Morpeth, but it has dwindled down to its present dimensions. It however boasts of an inn, and here sundry weary and thirsty travellers shunned a short and drizzling shower. The inn was very comfortable and tidy, and ornamented by many fine asters and other equally beautiful flowers in vases, which we suppose were the remnants of the horticultural exhibition held there a day or two previously. In a garden close to the inn the effects of the severe winter were very visible. A variegated holly tree showed only the faintest signs of vitality, while a plum tree had been completely killed. The gooseberry bushes were also damaged. Passing onward, and rejoining the Wansbeck, a building which was once a snuff mill is seen on our right. The lade which conveyed the water to the mill is nearly silted up. A modern bridge is now under foot. The river is apparently undermining the foundation. Though the bridge is founded on a rock, the strata are friable, and crumble away when acted on by winter frosts and floods. On a height on our left are the ponderous ruins of the ancient castle of Mitford, which was built in the twelfth century by William Bertram, who also founded Brinkburn Priory. The ruined walls of the keep are greatly cracked. The situation is very fine, on a sort of peninsula like Newminster, and in ancient times it must have been a somewhat important stronghold."

The ruined keep is surrounded with wood, which contains some noble ashes; sheltered behind the walls was a thicket of hollies. The pink-flowered Herb-Robert (*Geranium Robertianum*)

grew as a wall-plant; and the sweet-scented Violet (*Viola odorata*) and the marjoram (*Origanum vulgare*) in different parts of the ruins. Looking to the southern side of the river, the withered condition of the furze shewed the fatal incidence of last December's frost; and the like had been witnessed opposite Newminster.

Mitford Castle has been liable to repeated sieges and other casualties. It was seized by the Flemish troops of King John, 1215. In 1216 it was blockaded by Alexander II. of Scotland. In 1316-17 it was held by Sir Gilbert de Middleton and a company of bandits, from whom it was wrenched by Ralph Lord Greystock. In 1318 it was captured by Alexander III. of Scotland, and dismantled. In 1323, it was dilapidated, having been destroyed by the Scots. The Rev. John Hodgson has given eloquent expression to the reflections which its past and present states suggest. "When I suffer imagination, only for a little time, to lift up the curtain of history, and think I see from the opposite bank to the south the armies of Scotland investing the moated plain upon which the fortress stands; when I see showers of arrows or javelins flying round its bulwarks, the neighbouring hamlets and villages wrapped in flames, and hear the clashing of arms and the shouting of the besiegers and the besieged—how grateful is it to gaze again, and see the peaceful scene as it now is—the ruined keep, and its semi-circular wall that flanks it on the south overgrown with trees and weeds; the massive rampart that incased it on the north 'split with the winter's frost;' the rude walls and towers that environed the hill, rising in shattered masses among elder trees and thorns, or shadowed with groups of gigantic ash-trees; the moated and entrenched plain covered with cattle; and away beyond the beautiful white walls of the new manor house, the hoary remains of the old one, and the venerable church, backed with orchards and gardens, and river banks—all how lovely and luxuriant!"*

To resume Mr Thomson's statement:—

"The church and vicarage are on our right hand. The vicarage is very plain, and the only notable feature was a nice young *Picea nobilis*. The church, which is dedicated to St. Mary, was a very ancient erection in Norman and early English styles. By the munificence of Colonel Osbaldiston Mitford, it has been

* Hodgson's Hist. of Northumberland, Part ii., vol. ii., p. 56.

partly restored and rebuilt at a cost of £10,000. The church contains many tombs of the ancient Mitford family, and the oak carving was considered especially fine, though the taste which was observable in the restoration was not to be too highly commended. In the tower is a peal of eight bells, rung by machinery of a clock work description. The bells are saucer shaped and struck by wooden hammers, and the manner in which the mechanism plays a selection of hymns is said to be beautifully soft and harmonious. The churchyard, which is surrounded by many large trees, including two aged yews, in addition to a stone coffin, contains many interesting tombstones. Some bear odd inscriptions after the usual information regarding the deceased."

The gardener, Mr Lees, was waiting to take the company through the grounds at Mitford Hall. There was a fine spruce fir at the side of the walk near the church. The old hall had stood not far from the church. The tower is still extant; in the interior of it an old font is preserved. Over the entrance is the date 1637, and the arms of the family. In the kitchen of the hall, now occupied by one of the servants on the estate, is an old dog-spit wheel, an appliance now very seldom seen. The dog was put into the inside of the wheel composed of spokes, and by its motion turned it round, and this wrought the apparatus which turned the roast. The fire place was large, as fire places in those days generally were. In the old orchard adjoining there were several fine trees; acacias, maples, planes, silver firs, a medlar, old apple trees, &c. There was a noble ash; and a *Cedrus Libani*, whose circumference of stem was 8 feet, at 3 feet from the ground, where it gave off a clump of secondary stems. In the border behind the kitchen were several plants of Solomon's seal (*Polygonatum multiflorum*), whose roots are much in vogue among the pitmen for curing a black eye. A gardener at Winlaton informs me that the nailers there annoy him by their requests for Solomon's seal to apply to their bruises received in quarrels. By the side of the walk descending to the river, the tall wood-grasses *Bromus giganteus* and *B. asper*; throat wort (*Campanula latifolia*) and *Myrrhis odorata* grew; *Mercurialis perennis* was abundant; and *Saxifraga umbrosa* had been planted out. Crossing the river by a suspension bridge, the modern hall of Colonel Mitford was before us on the crest of the gently sloping height. It is a large and massive mansion, and occupies a lovely situation

in a finely-wooded park, which is surrounded by a woody amphitheatre all round. A large plane tree on the south bank of the river opposite to the hall, was said to be at least 100 yards in the circumference of the outspread of the branches. In the conservatory, citrons and oranges were producing fruit; the other plants noted were, a large and well-grown Camelia; a luxuriant creeping Bignonia or trumpet-flower; *Latania Borbonica*; *Kennedyia microphylla*; summer blooming Chrysanthemums; etc. Here was preserved a stone found in the church, which bears a Saxon inscription, not yet deciphered. Leaving the hall and its trim lawn, we pass along towards the gardens, viewing some fine Turkey oaks and Spanish chestnuts by the way. *Campanula latifolia* grows among the trees. A blackbird with one or two white feathers in its tail was observed. In the previous season, a black and white rook had been shot in the woods. At the gardens it was seen that the frost had killed a large ornamental briar hedge. Other results were, that yews, hollies, Portugal laurels and peaches were killed; any quantity of roses; and no end of laurel-bays. The evergreen oak (*Quercus Ilex*) was three parts killed. Hawthorns were blasted in the top twigs, and the oaks were considerably pruned. The lowest temperature marked here was 7° below zero. The garden was chiefly devoted to domestic purposes. There were some good grapes in the vinery; and some of the peaches were 10 inches in circumference. The flower borders are chiefly made up with annuals, and a few old plants, *Veronica spicata variegata* being one. In the greenhouses there were some well-grown ferns, principally Adiantums for table decoration. Among other plants grown were *Cyperus cotonifolia*, *Croton intermedium*, *Ficus elastica*, *Gilia achilleæfolia*.

I have again recourse to Mr Thomson's report:—

“A fountain was playing in the centre of the garden, but the water was very impure and full of vegetable matter. Close by the thermometer registered 62°. The obliging and intelligent head gardener had conducted the company through the grounds, and at the request of a member he showed us a large collection of landscape paintings of remarkable merit, all done by his own brush in his spare hours. They were really beautiful and natural. In returning we were shown a tall fir tree which lightning had split up about five weeks ago. There were traces

which shewed that the tree had been at some time anterior to this favoured with a similar compliment. Leaving the grounds the homeward march was begun. As we passed Mitford village Mr Fergusson related a story of a well which once was a feature of the place. A monk who felt convinced that eyesight could be restored to a blind person by washing the eyeballs with a piece of the robe of St. Cuthbert steeped in the water of the well, drew a cupful and inserted the cloth. To the astonishment of all present the fabric, when drawn out, shewed that water had not produced any effect upon it, as it was perfectly dry. On bathing the eyes of the blind person with the water the sight was restored, and the priest who drank the water, to be careful that it should not enter the well once more, was instantly cured of dysentery. So runs the strange story. The walk back to Morpeth was delightful, the only pause made being at a spring of mineral water which bubbled up through the sand on a haugh by the river."

The robe of St. Cuthbert was of amianthus, and would neither wet nor burn. Reginald who lived in the reign of king Stephen, is the authority for the miracle at the well, in his book, "*De Admirandis*," &c., chap. 53, pp. 109-10 (Surtees Society). Hodgson, in his translation says, it was the dish of iron chained of a neighbouring well filled with crystal water, into which the miraculous cloth was introduced. The original word is *concha*. It was king Edwin, who, according to Beda, provided for the wayfarer a dish attached to the public wells, before A.D. 633. "The king took such good care for the good of his nation, that in several places where he had seen clear springs near the highways, he caused stakes to be fixed, with brass dishes hanging at them for the refreshment of travellers."* Col. Mitford has erected a stone-fountain on the supposed scene of the miracle.

After dinner a cordial vote of thanks was tendered to Mr Jas. Fergusson, Morpeth, for the information he had imparted, and the trouble he had taken during the day. Mr Fergusson, and the Rev. James Spence, Ladhope, Galashiels, were proposed as members of the Club. There were laid on the table reports on the effects of the past winter on vegetation from numerous correspondents.

During a morning walk by the river-side below the town,

* Stevenson's Beda, p. 382.

Mentha arvensis, and corn-poppies were noted as field-weeds; *Potentilla reptans*, brambles, common burnet (*Sanguisorba officinalis*) and *Geranium pratense*, grew by the hedge and way-sides; *Geranium sylvaticum* and *Melica uniflora* in the woods. In a garden I saw the common fig-wort (*Scrophularia nodosa*) cultivated. This is of great repute in this part of Northumberland, for making a healing ointment of, and so much is it valued, that "herbalists" have made it very scarce in the wild state. In the north of Ireland so much is it esteemed, that it is called "Rose Noble" from its supposed efficacy.

The fifth meeting was held on September 29th and 30th, at Gilsland. The company which met on this occasion numbered about fifty, most of whom arrived on the evening of the 28th, and took up their residence in the Shaws Hotel, an immense establishment with every accommodation. Among those present were the President, Mr Charles Watson, Dunse; the two Secretaries, Dr Francis Douglas and Mr Hardy; Revs. J. F. Bigge, Stamfordham; J. Collingwood Bruce, LL.D., Newcastle; David Paul, Roxburgh; R. F. Proudfoot, Fogo; G. W. Sprott, D.D., North Berwick; William Snodgrass, D.D., Canonbie; William Stobbs, Gordon; G. P. Wilkinson of Harperley Park, Darlington; R. Hopper Williamson, Whickham; and Adam Wright, Gilsland; Drs Charles Douglas, Kelso; Bowie, Carlisle; Grierson, Melrose; Main, Alnwick; and McDowall, Morpeth; Lieut.-Col. Crossman, C.M.G. and Capt. Forbes, R.N., Berwick; Messrs J. F. Baird of Beaumont Hill; James Bogie, Edinburgh; Alex. Hay Borthwick, Ladiesyde, Melrose; John B. Boyd of Cherry-trees; T. Craig Brown, Woodburn; M. H. Dand, Hauxley Cottage; F. W. Darnell, South Durham; John Freer, Melrose; James Heatley, Alnwick; G. P. Hughes of Middleton Hall, Wooler; W. A. Hunter of Wellfield, Dunse; James B. Kerr, Kelso; C. F. McCabe, Thirston House, Felton; — Maling, Newcastle; — Philipson, Newcastle; Robert Renton, Fans, Earlstoun; Adam Robertson, Alnwick; Duncombe Shafto, Brancepeth Rectory; — Snodgrass, Canonbie; J. J. Steytler, London; G. H. Thompson, Alnwick; John Turnbull of Abbey St. Bathans; Thomas Turnbull, Lilliesleaf; J. J. Vernon, Hawick; Adam Watson, Morpeth; and two ladies.

The hotel stands at an elevation of about 600 feet, and the view from the terrace commands the vale of the Irthing, and the

gently rising hill country of Denton Fell, backed by the darker heath-clad height of Tindale Fell. Owing to the haze the distant Skiddaw and Saddleback (or Blencathara) were invisible; but they can be seen with a clear atmosphere. The opposite hill-sides appeared to be boggy, and were at this season of a rusty green. The brighter portions were those that had been mowed for hay. Many indications of old cultivation were apparent, but corn-growing had been abandoned in favour of pasture. The small white-washed farm-steadings were thinly scattered in their loneliness far away near the moor edges. Some of them had been the patrimony of Statesmen, who had mortgaged their little properties till they were ruined.

When we rose next morning the country was wrapt in mist, and although the sun partially dispelled it, the grass was loaded with moisture. Three companies were formed, one walking and another driving to Birdoswald, to await Dr Bruce's arrival, who had kindly undertaken the direction of the day's excursion. A third company commenced their study of the Roman Wall, a mile more to the east, near the Railway Station, to whom the Rev. Adam Wright, vicar of Gilsland, acted as cicerone. The members of the Club were greatly indebted during their stay to this gentleman's courtesy; and he kindly arranged this part of the walk. To him I owe a sketch of what we saw when tracing the Wall here:—

“The first place visited by the Club was Mumps Hall. The members assembled here at ten o'clock in the morning of the 29th September. This is the ‘Mumps Ha’ of ‘Guy Mannering.’ As the name means Beggar’s Hall, it was probably given at the time when the house did not bear a good character. Here the members inspected the external appearance of the once famous hostelry. The house has recently been enlarged. The ancient portion of the walls is yet traceable, and the work of restoration brought into view the small old windows with their mullions and iron bars; and a secret passage was discovered leading from the kitchen to the attic. The entrance was in a closet at the right side of the fire-place, and the chimney was so built as to serve the purpose of a staircase.” [In the loft or attic fragments of what had been the dead bones of a child or children were discovered.] “Below Mumps Hall, and on the west side of the Poltross, which is sometimes called the *Powtross* Burn, is

Merrilies Cottage. This was erected on the site of the small thatched cottage where Margaret Carrick, the Meg of Mumps Ha,' died. Her grave is now an object of interest in the parish churchyard of Over Denton.

"Passing eastward over the Poltross Burn, Northumberland was entered, and proceeding under the North-Eastern Railway and to the right of the Samson Inn, the fosse of the Roman Wall was entered at Buff Head. This is about one hundred yards south of Gilsland Railway Station, and near to the farm-houses called 'The Gap' in Thirlwall township. The Gap is supposed to be the place where the Roman Wall was broken down, and the name of the township Thirlwall is said to be derived from the same circumstance—the hurling down, or gap, made in the wall. On this point, the members had an interesting discussion on the meaning of the name of the township. [Some of the green mounds here appeared not to be artificial but gravel knolls.]

"Turning westward past the cottages called 'The Crooks' [which is mentioned by Gordon, *Itin.* Sept., p. 80], down to Gilsland Station, and thence along the railway over the Poltross Burn, the Roman remains which are supposed to be a Mile Castle were examined. The curious point here is—that recent excavations tend to prove that something more extensive than a Mile Castle existed at this place. At the east side of this Roman building the wall is ten feet in thickness—and next to this is a doorway two feet wide, and a wall two feet thick. A local traditional name for this place is 'The King's Stables.' Passing down the burn-side a curious piece of wall was examined, which is certainly Roman. It is at right angles with the stream, and probably formed a portion of the approach to a Roman bridge. And in support of this theory is the fact, that just below and standing in the stream, there is a large stone which appears to have been one of the pillars of an ancient bridge. And it is probable that a bridge would be built at this place, because it is exactly in the line of 'The Stanegate' to the south of the Roman Wall. [Camden says the Wall 'carryd an arch over the rapid brook of Poltross.'—*Britannia* by Gibson, fol. 1068.] From the Mile Castle the next course was through the grounds of Gilsland vicarage. Here the Wall—the Fosse—and the Vallum are clearly seen, and in the grounds of the National School the line of 'The Stanegate' can be traced. [In the vicarage garden, the

under stones projected beyond the wall, and the second course also, and on this extended base the wall rested; on the steep portions the bottom of the wall was protected by a causeway, to prevent its being undermined by rain-torrents.] Crossing the road leading from Mumps Hall to Over Denton, the members entered the Willowford farm and traced the line of the Wall through the first field, when they entered the deep Fosse. The bottom of the Fosse is the cart road to the Willowford farm."

"Passing in the rear of Willowford, the ditch has been filled up, but the wall, though in a dilapidated condition, descends through another field, and may be traced by the great quantity of large, square, and rounded stones in the fence, overgrown, and almost entirely covered with trees and underwood. It continues in this way until within fifty yards of the river, and in a straight line with it, on the top of the opposite high cliff, may be seen the beginning of the wall running to Birdoswald."* Camden (*Britannia*, fol. 1038) was of opinion that the Irthing was here crossed by a bridge: "Upon the wall is Burd-Oswald; and below this, the Picts-Wall pass'd the river Irthing by an arch'd bridge." The following is the latest evidence on the subject:—"Feeling confident," says Jenkinson, "that here would exist the foundation of a bridge similar in character to the wonderful remains to be seen on the banks of the North Tyne at Chollerford, we paid many visits to the place, and came to the conclusion that such would be met with if the accumulation of sand on the banks of the stream were removed. Fortunately, on our last visit, we met at Birdoswald with Mr John Armstrong, a master mason, residing at Gilsland, and he assured us that when the old Peel house at Willowford was pulled down, thirty-six years since (written in 1875), and the present farm-house built, the foundation of the bridge was visible, and a great number of very large stones, beautifully shaped, and with the luis holes in them, were taken from the bank of the river, close to where the wall evidently crossed, and were broken and used in building the house. From the quality of the stones it was evident they had come from the Lodges Quarry, near the Low Row railway station. He was also of opinion that they only got a part of the stones, and that many more would be found in their original positions if the sand was removed."†

* Jenkinson's *Guide to Carlisle, Gilsland, &c.*, p. 80.

† *Ibid.* pp. 199, 200.

To bring up the Natural History observations, we shall revert to the Poltross burn ; where the bird-cherry and the hazel grew at the entrance of the tangled glen. It is a reputed locality for *Lysimachia vulgaris*. There were also some good oaks in the fields. *Linaria organifolia* was one of the border-flowers at the vicarage, which I subsequently saw in a half wild state at Rose Castle. Garden flowers have their districts, as well as wild. On the remains of the wall, hazels, mountain ashes, briars and brambles manifested the tendency of the ground when stony to run to woodland. *Mentha arvensis* grew as a field weed ; and it was difficult to say whether it or the quicken was most prevalent. Before us the Irthing hid itself in a darksome dell between steep and wooded banks. The swallows had not yet deserted the Willowford farm for their winter destination ; they had not been present about Hexham on the previous day ; but were seen on the day following near Naworth. Climbing a bank above the farm-stead, some pretty fungi were picked up in the pastures, which were deteriorating into a half-wild condition. A granite boulder placed on the ridge, was found by measurement to be 4 feet 8 inches long, 3 feet broad, and 2 deep. Mr Howse had already prepared me to expect Criffel granites on our route. A number of fragments of a considerable variety of granites were preserved in the vicarage garden. Many larks and pipits were hovering in a singing position in the air. This is a county for larks. They were afterwards seen most numerously at Welton, beyond Carlisle. We walked along the margin of a concave wood, called the Hollow Wood, which contained hazel, mountain-ash, birch, ash, sallow and alder, and then crossed, by successive trips in a farm-cart, the Irthing, which was in flood. Here there were many mountain limestone corals among the channel stones. Thickets of the *Salix purpurea* grew at the crossing, and there were several wild roses ; the fruits of *Rosa villosa* being rich and plump. At Underheugh, a small farmery, a portion of a Roman altar lying flat by a wall-side, was turned up for our inspection, and presented this inscription :—

I . O . M .

COH . I . AELIA.

(The first Ælian Cohort to Jupiter the best and greatest). The remainder was broken off. Here on the steep grassy bank above the river, and beneath the walls of Birdoswald, a fox-hunt was

witnessed. Reynard was killed in full view. Foxes are numerous in the vicinity. The "Roman hunters of Banna" have still their representatives here. There was an immense depth of boulder clay in the scarp. The perforations of the sand-martins were visible in the sandy deposits.

On arriving at Birdoswald the companies were combined. Dr Bruce now took the guidance, and pointed out the peculiarities of the station, and described most minutely the economy of the Roman garrisons, who occupied the strongholds on the Wall, and pointed out the various sculptured remains accumulated about the farm-house, all of which are described in the Dr's various works on the great barrier of the middle isthmus, for which he is the greatest living authority. Of this portion of the days proceedings, Mr J. J. Vernon of Hawick, has favoured me with a report:—

"Calling attention to the extent of the Wall of Hadrian, which extends a distance of 70 miles from Wallsend on the Tyne, to Bowness on the Solway, Dr Bruce proceeded to state that this great fortification consisted of three parts:—1st, a stone wall or Murus, with a ditch on its northern side; 2nd, an earthen rampart or Vallum, south of the stone wall; and 3rd, stations, watch towers, and military roads. Originally the wall had a total elevation of eighteen feet, with a width averaging eight feet. On the north side was a fosse the average size of which was thirty-six feet wide and fifteen feet deep. There were eighteen stations along the wall at a distance between them of four miles. These camps were military cities, providing secure lodgement for a powerful body of soldiery. Birdoswald was the 12th station on the line, and during the Roman occupation was known by the name Amboglanna, derived, Dr Bruce suggested, from the Latin *ambo*, and the British *glan*—meaning the circling glen. The position of this station is remarkably strong, and it is the largest station on the line, having an area of five and a half acres. With one other station, it possesses the peculiarity of having two gates, both in its eastern and western ramparts. A very great number of inscribed stones have been found in the station, most of which confirm the statement that the first cohort of the Dacians was quartered here. By means of extensive excavations the gateways of the station have been displayed, and some of the interior buildings. The walls of the station are in a good state of

preservation, the southern rampart especially, which shows eight courses of facing-stones. The walls are five feet thick. From the fact that the wall adapts itself to the north rampart of the fort, the station is entirely independent of the wall, and must have been built before it. The north gateway exists no longer, but its nature may be judged by the south gateway, which is a double one, and a beautiful specimen of Roman masonry. Each portal is eleven feet wide and has been spanned by an arch. The pivot holes still remain. As usual, this gateway has two guard-chambers, the western one only being excavated. Both of the gateways on the eastern side have been excavated, but one is much twisted and broken by the yielding of its foundations. The other is in excellent preservation. The whole interior of the camp is marked with the lines of streets and the ruins of buildings. Near the lower gateway in the east wall three chambers, of nine or ten feet square each, have been laid bare. Here was found a figure (now in the neighbouring farm-house) of the kind usually called *Deæ Matres*, or the good mothers, whose name it was not lucky to mention. Dr Bruce next called attention to the wall at the foot of the farm-house garden, which formerly formed part of a Roman building of large dimensions. This wall, although not excavated to the bottom, has been proved to be upwards of eight feet in height, and is supported by eight buttresses. It extends 92 feet from east to west, and is $3\frac{1}{2}$ feet thick. In the middle of each space between each buttress is a long slit or loop-hole, which Dr Bruce supposes to have been connected with the flues used in warming the building. Immediately in front of this wall is another of similar thickness, whilst to the north, and in the garden, three other walls in addition are to be found. Arranged at the west gable of Birdoswald farm-house an interesting collection of Roman altars and stones was next inspected. Attention was directed to an altar dedicated to Jupiter, the Best and Greatest, by the first cohort of Dacians, which at this time, besides the epithet of *Ælian*, derived from Hadrian, seems to have had that of *Tetrician*, derived from the Emperor Tetricus. There is also the head of another altar, dedicated to Jupiter, having a series of crosses, one of them being of that peculiar form called *gammadion*, on the capital, whilst beneath appear the dedicatory letters *I. O. M.—Jovi Optimo Maximo*. Another stone has the inscription—*LEG. VI. VIC. FIDELIS*, intimating that

the Sixth Legion, styled the Victorious and Faithful, took part in the erection of the building in which it was inserted. The Club next proceeded westwards from Birdoswald about two miles to visit the red freestone quarry, which was extensively wrought by the Romans, now known by the name of Coome Crag. Here Dr Bruce pointed out the inscriptions left on the face of the rock by the Roman workmen, such as *SECVRVS*, *IVSTVS*, and *MATHRIANVS*. At the foot of the cliff is an inscription *FAVST. ET RVS. COS.*—Faustinus and Rufus, Consuls (A.D. 210). It was remarked that whilst the rock in the immediate vicinity of this inscription is covered with a smoke-coloured lichen, the letters themselves are covered with a white lichen, thus rendering them very distinct."

The lichens being grown in the shade are in that leprose condition, in which species cannot be discriminated. The same sort of appearance was seen in letters on a Roman altar placed in the shade at Lanercost. When bruised the green gonidiæ stratum was manifest.

Coombe Crag is a most remarkable aggregation of rocks and wooded scaurs. On the line of the portion of the wall examined, hazel, bird-cherry, ash, and willow, were growing out of the wall; as well as *Polypodiums* and other ferns. Herb-Robert in flower ornamented the remains of Birdoswald, and is thus answerable to Sir Walter Scott's

—"flowers which purple waving
On the ruined ramparts grew,"

flowers that have not been identified.

On returning, Gillalees Beacon, called also the Grey Fell, a hill at a distance, which has on its top a cairn-like object was visible. This is the ruin of a Roman watch-tower by the side of the Maiden Way. We crossed into a field at the place where the earth-works of the Vallum are strengthened by a second fosse, of which it is difficult to divine the object, and then re-crossed to the wall on its south side to examine the remains of a turret. Its walls were 3 feet thick, and it measured 13 feet from side to side. It was a turret of this kind, that Mr Clayton cleared out at Tomertay hill near Walwick. We found a near way by a foot-path across the fields, but it was near 6 o'clock before the last of the travellers reached the hotel.

After dinner, and the usual toasts, Dr F. Douglas tendered the

heartly thanks of the Club to Dr Bruce for the treat he had afforded the Club, and proposed that gentleman's health, to which Dr Bruce replied at some length.

The following were proposed as members:—Mr John Broadway, Alnwick; Alexander Dickson, M.D., Regius Professor of Botany in Edinburgh University; Rev. C. J. Cowan, Morebattle; Rev. William Snodgrass, D.D., Canonbie; and Mr S. F. Widdrington of Newton Hall.

Mr J. B. Kerr, Kelso, exhibited a small bronze celt, furnished with a suspensory loop, now broken, found recently in a trench dug for building a stone-dike near Morebattle; also a locust, which had been caught near Merton, in a stook of corn; Mr McCabe mentioned that a hoopoe (*Upupa epops*) had been recently shot near Felton, and Dr Charles Douglas that he had observed *Lysimachia vulgaris* in a new locality at the roadside between Lowlynn and Lowick. Mr Vernon shewed a silver ring inscribed IESV NAZAR + that had belonged to the recent great find in Selkirkshire. The Rev. Geo. H. Wilkinson exhibited and described some beautiful silver medals. They were derived from the Northumbrian family of Forster, and handed down as heir-looms. One was in commemoration of the martyrdom of John Hus, and bore the following inscriptions:—

“JOA . HUS .

CREDO . UNAM . ESSE . ECCLE-
SIAM : SANCTAM : CATO-
LICAM.”

“JO . HUS : CONDEMNATUR

CHRISTO : NATO : 1415 .

A : ANNO : CENTUM : REVO-
LUTIS : ANNIS : DEO : RE-
SPONDERITIS : ET : MIHI.”

During dinner the band of the establishment played a selection of airs. Several members addressed the meeting on the object for which they were assembled, and all expressed themselves gratified with the day's excursion, and the beauty of the scenery on the route.

September 30th was everything that could be wished, mild and enjoyable, sunshiny and clear. A visit to Lanercost and Naworth was the order of the day. A large number preferred to hire conveyances, several walked, and the remainder went by rail.

Reaching Naworth Station, this last party walked to Naworth Castle. Its grey towers soon came in sight environed by woods of ancient growth. In leaving it for the present, and passing on through the park, "Belted Will's Oak," which adjoins the road, was measured and ascertained to be 14 feet 10 inches in girth at four feet above the ground. It is a fine healthy tree, with far spreading branches. The tradition went that thieves were hanged summarily on the bough that stretches across the road; but there is reason for discrediting the story as applicable to Lord William Howard. There were numerous other large oaks in the park of greater dimensions than this, especially some patriarchs beside the drive near the castle, but a number of them were hollow or decayed in the interior of the trunk. The park has been long celebrated for its oaks. In an Inquisition of 31 Elizabeth, 1588, the park at Naworth is said to contain "by estimation 200 acres, it is very barren lande, there is in it a great store of olde oke wood, which is worth, if the same were presently sold about £200."* In the open part of the park there were some picturesque stag-horned trees, among others of stately growth and amply ramified. The remains of an avenue of good beeches, mixed with a few clean ashes, line either side of the way; their bases being protected by piles of stones. New belts of plantation appeared in several directions. Some of the distant beeches in the clumps, in their style of ramification, very much resembled cedars; a peculiarity of aspect which I have observed elsewhere. Another good view of the summit of the castle was here obtained. On some oaks near a ravine on our left hand, the ivy had been killed by the frost. There was some excellent timber here. The white variety of *Lychnis diurna* grew by the roadside. This forms a beautiful garden flower in its double state. The Irthing was crossed by a narrow high-backed bridge, which bore the date MDCCXXIII. *Asplenium Ruta-muraria* fringed in great tufts the walls of the bridge, and it grew also on the mortar of the adjoining stone-dikes. It was likewise present at Gilsland on the walls of the public road near St. Mary's Church.

On coming to the vicarage at Lanercost, the feet and tail of a polecat were observed to be affixed to the stable-door; the relics not unlikely of one of the last of its race in that vicinity; for in the Brampton district it only occurs now very occasionally.

* Introd. to Household Books of Lord William Howard, p. lxxvii. Note.

The priory is built of red-sandstone, which gives it a sombre look. It stands on a flat by the side of the Irthing, with some broad venerable sycamores dispersed around. The buildings are partly Norman, but mostly early English, of an early and massive design. There is a fine Norman arch at the entry, and an outer arched gateway of spacious dimensions in a similar style. The tower, transepts, and chancel are roofless, but are in good keeping; the nave has been restored and is occupied as the parish church. The clerestory is in its original fine condition. The church contains monuments to the De Vausés, the Dacres, the seventh earl of Carlisle who wrote the book entitled "*Diary in Turkish and Greek Waters*," and also to three subsequent earls. A stone inserted into one of the walls commemorates a distinguished native physician, Thomas Addison, M.D., President of the Medico-Chirurgical Society of England, and of Guy's Hospital—date 1860. He was the son of Jonah and Mary Addison of St. Mary's Holm. From a brass on the wall the following was copied:—

"Sir Roland de Vaux that sometyne was ye Lord of
Tryermayne.
Is dead, his body clad in lead, and ligs law under
this stayne. man.
Even as we, even so was he, on earth a levand
Even as he, even so moun we, for all ye craft we can."

The date of this Sir Roland is 1445.

"The priory, church, and monastic buildings," says Dr Bruce, "are almost entirely composed of Roman stones. They may have been procured from the Wall; but the mind can scarcely divest itself of the idea that there has been a station here."* It was remarked by the present visitors that the numbers of mason marks on the building were unprecedented. In the cellar or vault were preserved a number of Roman altars; one which came from Birdoswald reads thus: "To the holy god Silvanus, the hunters of Banna (*venatores Bannæ*) have consecrated this." Another stone from the same place represents Jupiter and Hercules; and another altar is dedicated to the god Cocidius, by the soldiers of the 20th legion in discharge of a vow. The emblem of the 20th legion—a boar—appears at the foot of it. Among the Roman stones lies a broken obelisk with dog-tooth ornamentation, and an unintelligible assortment of letters, with the

* *Wallet-Book of the Roman Wall*, pp. 189-190.

words "haec crux Scot facta," at its base. The cross in the lawn in front of the vicarage is of similar workmanship, and is said to mark the place where the buying and selling took place, and where public preachings would be delivered.

The various intricate passages to apartments in the monastery were threaded, but there was nothing particularly gratifying to be seen. It was inhabited by its latest owners—a branch of the Dacres—who converted the dormitory into a hall; and the strong beam of wood which formed its mantel-piece bears the initials of Christopher Dacre, 1586.

An attempt was made to botanize the ruinous parts of the structure. *Jungermannia Hepatica*, *Cardamine hirsuta*, and *Geranium Robertianum* occupied the floor; *Linaria Cymbalaria* was pendent from the outer walls; and *Verbascum Thapsus* grew in the vicarage garden; which displayed also some shewy phloxes, although of common sorts—white and crimson. There was much yellow wall-flower on the ruins; and a sprinkling of the feverfew, *Pyrethrum Parthenium*. Briars, carrying hips, grew triumphant on the top of the choir walls; and a few plants of *Hypericum perforatum*; and young ash and elder trees had rooted themselves in the chinks. In the headway of the clerestory in the south-east angle of the choir is an altar to Jupiter erected by the first cohort of the Dacians—styled the Ælian. Within the letters, which are in the shade, the same white lichen was noticeable, to which attention was drawn the day before at Coombe Crag. A wide look out on the haugh in which the priory stands was obtained from top of the turret stair. A pair of pied wagtails were flitting about the roof in pursuit of flies, the latest seen for the season.

Lanercost priory, it is said, was built by Robert de Vallibus or Vaux, the second Norman lord of Gilsland, in expiation for the crime of having slain the dispossessed proprietor, Gilles Bueth, who, after making many attempts to regain his inheritance, had been invited to a friendly meeting for settlement of differences, and then was treacherously murdered. It is somewhat remarkable that when doubts of the verity of this story had begun to be promulgated, it should have been corroborated by a discovery in 1864, of a Runic inscription on a crag at Baronspike, lying about two miles to the N.E. of Bewcastle Church. Dr Edward Charlton reads the inscription thus: "Baranr writes (these) to

Gillesbueth who was slain in truce (by) Rob de Vaulx at Feterlana now Lanercosta.”* It is from this Gilles, it may be remarked, that Gilsland obtains its name; and Bewcastle still commemorates Bueth his sire.

The priory is not older than 1164. It was liable to be grievously disturbed and pillaged by the Scots. In 1280, Edward I. and his queen dwelt here to enjoy the recreation of hunting in Inglewood Forest. In 1296, the Scottish army burnt the conventual buildings; and in 1297, William Wallace and his men plundered it once more. In winter 1306-7, Edward I., breathing out vengeance against the Scots, on his last campaign, resided here during a long illness; having, it is thought, occupied on that occasion the Edwardian tower. In August, 1311, Robert Bruce and his army rested here three days; and in 1346, David II., during an invasion, spoiled it so completely that it henceforth relapsed into obscurity.† On the suppression of the monasteries the priory and adjacent lands were granted to an illegitimate branch of the Dacre family.

What is called the Chronicle of Lanercost, was the work of a friar minor at Carlisle, and has no other connection with the place, than that the MS. was preserved in the library of the priory. The Chartulary or Register of Lanercost is to be found in the Transactions of the Royal Society of Literature, vol. viii., new series.‡

We re-crossed the Irthing on our return to Naworth, took the footpath up a secluded dean in the woods, which ultimately becomes a steep ravine as it winds round behind the castle, and is enlivened at the bottom by a little burn, which forks into a second “beck”. These streams enclose between them the elevated tongue of land on which the castle flanked by precipices is situated. The following plants were noticed near the path-way:—*Equisetum Telmateia* (maximum); *E. sylvaticum*; *Stellaria nemorum*; *S. Holostea*; *Hieracium boreale*; *Mercurialis perennis*; *Circea Lutetiana*; *Asperula odorata*; *Lonicera Periclymenum*; *Viburnum Opulus*; *Ajuga reptans*; *Rubus suberectus*; *Geranium Robertianum*; *Melica uniflora*; *Polystichum aculeatum*; *Vaccinium*

* *Archæologia Æliana*, N.S. vol. vii., p. 83. For the opposite opinion see Jenkinson's Guide, &c., p. 88; Sidney Gibson's Northumbrian Castles, iii., p. 6.

† See Jenkinson's Guide, pp. 91-92. ‡ *Ibid*, pp. 89-90.

Myrtillus; *Fragaria vesca*; *Lysimachia nemorum*; *Nepeta Glechoma*; and *Galium Mollugo*. The rhododendrons were luxuriant. *Prunus laurocerasus* was much injured by late winters. The only bird visible was a wren. Caterpillars, striped green and black, were suspended by a thread from the elms; and afterwards the perfect moth was captured by one of the party and proved to be *Abraxas Ulmata*. This species is not uncommon on the Derwent near Gibside.

On arriving at the castle the whole company were mustered, and obtaining admission, saw the ancient parts of the building, which includes the Warders' gallery, which was Lord William Howard's work, and extends along the central block of the building, looking out to the south. It contains tapestry and family portraits, which mostly came from Castle Howard. The articles previously in this gallery were consumed by the fire, which partially destroyed the castle in 1844. To abbreviate the Rev. Canon Ornsby's account, this gallery, "at its eastern end communicates by a newel stair, with the library, oratory, and bedroom, which occupy the upper stage of 'Belted Will's' Tower. These remain very much in their original state, having been uninjured by the fire. An oaken door, of great strength, with massive bars and bolts, protects the entrance to these rooms. The library still contains a portion of the books and MSS. which Lord William collected. The windows are unaltered. They are very small and narrow. The roof is very beautiful. It is of low pitch. It came from Kirkoswald. In the oratory is a painting, dated 1514. It has the Crucifixion in the centre, with the Scourging on one side and the Resurrection on the other." There are many other subjects of antiquarian interest in these apartments. "The bedroom adjoining has a large stone mantelpiece, the armorial bearings carved on which identify this upper stage of the tower as the work of Thomas Lord Daere." The outlook from the leads is very extensive. "The Waste of Bewcastle, dreary and desolate, lies to the north. On one side are the dusky hills of Scotland, on the other side those of Tynedale and Redesdale, in Northumberland. The rich and pleasant valley of the Irthing stretches from east to west at the foot of the Castle walls, whilst immediately around lie the home grounds, the grey walls of the garden, with its rectangular grass walks, little altered, probably, since Lord William enclosed and laid it

out; a straight umbrageous walk beyond it, which he is said to have planted, and which bears his name, the wooded ravines which skirt the Castle walls, and the park beyond, diversified by masses of woodland and scattered groups of venerable trees.”*

Before the great fire, the Castle was roofed with grey flags, and they were fastened down with sheep-shanks or “trotter-bones”—the metacarpal bones of sheep. “The bones were driven into the flag till flush with the upper surface, and suspended on the rafter by the part projecting below.”†

“The lower stages of this Tower are occupied by dungeons. Access to them was provided from the Lord’s apartments above. It is very possible that in Lord William’s time the room or rooms immediately under the library and oratory may have been fitted up as a place of concealment for a priest.”‡

We were then taken to the noble hall, which belongs to the renovated part of the building. The five pieces of tapestry in the hall came from Castle Howard. “Along the whole length of the hall,” says Mr Sidney Gibson, “on each side, heraldic shields are displayed on the corbels supporting the ribs of the roof. Beginning at the upper (the south) end, there are on the eastern side the shields of Howard, Mowbray, Braose, Segrave, De Brotherton, Fitzalan, Warren, Tilney, Audley, Uvedale, Cavendish; on the western side, Dacre, De Multon, De Morville, Vaux, Engaine, Estravers, Greystoke, Grimthorp, Bolebec, De Merlay, Boteler—a

‘Long array of mighty shadows.’

The hall contains many family portraits, and several pieces of armour.”§ What is called Belted Will’s armour is too short and small for persons of the bulk of the present day.

A very old jasmine spreads over the doorway of the great hall, which has awakened the poetical susceptibilities of three successive earls of Carlisle. The Castle-court is said to be the scene of Frith’s painting, “Coming of Age in the Olden Time.” On the walls of the court, *Polypodium vulgare*, *Parietaria diffusa*, and *Linaria Cymbalaria* were growing.

* Introduction to Lord William Howard’s Household Books, pp. lxx, lxxi, and lxxvii.

† On Trotter Roofing. By Professor Duns, D.D. Proceedings of the Society of Antiquaries of Scotland, 1880, pp. 180, 181.

‡ Introduction to Lord William Howard’s Household Books, p. lxxi.

§ Gibson’s Northumbrian Castles, &c., iii., pp. 40, 41.

The antique garden appears to grow little more than vegetables for the household. The apple-trees were old and decayed at the top. By way of ornament there were a few old yews clipped into pyramidal shapes; there were few flowers, and these belonged to a past age of gardening. There were some bright looking phloxes; Solomon's seal; and the single *Chelidonium majus*; and there was a little rockery with wild ferns at the entrance. "On the walk outside the eastern wall of the Castle, and near 'Lord William's Tower,' a noble old yew-tree stands on the edge of the declivity—a venerable contemporary of the founders of Naworth Castle." So says Mr Gibson, but from inadequate information, none of us saw it.

To give the history of Naworth would be altogether superfluous. Rather let me quote from Canon Ornsby's Introduction to Lord William Howard's Household Books, published by the Surtees Society, a few paragraphs that will be new to most members of the Club, in vindication of Lord William from misrepresentations of his history, that are constantly being repeated, and which Sir Walter Scott by giving them the sanction of his authority, has rendered still more widely credited.

"The year in which Lord William actually made Naworth Castle his residence cannot be fixed with absolute precision. Here, at all events, he was certainly living in 1607. From that time until his death it was his chief residence, and the place around which there has been such an outgrowth of traditions respecting him."—"By the name of *Belled Will*, he is now popularly known, and by the title of Lord Warden he is still traditionally designated. Tradition tells us also, and the statement finds a place even in the sober pages of the historian, that he maintained a garrison of 140 men at Naworth; whilst stories based upon the rough and ready chastisement which he is supposed to have meted out to the banditti who infested that wild country, still meet with unhesitating acceptance and undoubting belief."

"It is a somewhat ungrateful task to throw the light of historical evidence upon wild and picturesque legends which, in successive generations, have charmed the ear of eager childhood, when told by some hoary grand-sire or some ancient grand-dame, to a listening group around the winter hearth. But legends these really are, so far, at least, as Lord William is concerned. The popular idea which prevails concerning him, even amongst

educated people, is as purely imaginary as Sir Walter Scott's portraiture of his outward man. He never was Lord Warden. Such an appointment, with Elizabeth's feelings towards the Howards, could not have taken place whilst she occupied the throne, and after the accession of James I., George, the third earl of Cumberland, was selected to succeed Thomas Lord Scrope, and was the last who filled that high office. He died in 1605, and the government of the Borders appears to have been subsequently vested in Commissioners, who were partly Scotch and partly English, appointed by the Crown. The first Commission in which Lord William Howard's name appears is in the year 1618. Previous to the issuing of this Commission Lord William Howard possessed, apparently, no office which gave him any peculiar authority." "There is no evidence whatever of a garrison being maintained at Naworth."

"Equally improbable is the tradition which pourtrays Lord William as promoting or maintaining order in the country by means of the sharp and summary procedure of martial law. There is not a trace of his having acted at any time in such a manner. That he was active and energetic in bringing marauders to justice there can be no question, but it was justice administered by the law of the land. The very list, drawn up by his own hand, of those offenders who expiated their offences by death, during many years of his residence at Naworth, goes to prove this. In many cases the place of their execution is noted; some suffered at Durham, some at Newcastle, not a few at Carlisle, and others in Scotland, showing that they were brought to trial at the assizes in the ordinary way."

"These traditions belong really to an earlier time. They belong to a time when the banner of the Dacre, with its silver scallops (upon a martiall red), still proudly waved over the towers of Naworth. They were stories half-fact and half-legend, associated in the first instance with the powerful chieftains who, for two generations, had been entrusted with the powers of Lord Warden of the Western Marches, and who unquestionably maintained a garrison of resolute and faithful retainers within the walls of Naworth, always ready to raise the wild shout of 'A Daker, a Daker! a read bull, a read bull!' and to rush with as much eagerness to a raid upon the Scottish Border as though it were a scene of joyous pastime."*

* Introduction, &c., pp. xxi.-xxx.

Canon Ornsby has also satisfactorily shewn that Lord William died at Greystock Castle either on or about October 7th, 1640; not of the plague, but from natural decay, and that he was buried in Greystock church.*

During the Club's short stay at Gilsland, but a slight acquaintance could be formed with the Natural History of the neighbourhood. *Saxifraga aizoides* was seen on the dripping shale strata approaching to the Spa—*Vicia sylvatica* and *Rubus saxatilis* grow among the rocky scaurs of the Irthing. Bird-cherry appeared on the haugh opposite the Spa. A broad-leaved helleborine, without flowers (*Epipactis*, sp.), was gathered in the woods; and *Neottia Nidus-avis* grows there. *Galium boreale* and *Equisetum variegatum* are both recorded for Wardrew. Mr Parkin, photographer, now of Wakefield, brought a plant of *Asplenium viride* from Cramel Linn on the Irthing to shew to the Club. It was once plentiful there, but has been nearly all carried off, except from inaccessible positions. *Hypericum humifusum* was got in the fields near Gilsland, and again near Naworth. The *Primula farinosa* was said to bloom profusely in marshes near Brampton. With regard to birds, Mr Parkin said that wheatears built frequently in the stone-walls near the Railway Station; that stone-chats were not rare; but whin-chats were scarce. The gray wagtail is common on the Irthing. The titlark was known. Of the titmice, besides the common species, the cole, and the long-tailed tits occur at Gilsland; the marsh titmouse is scarce. When the galls produced on the spruce firs by *Adelges Abietis* open to allow the insects which develope within them to escape, the trees present a busy scene, for the young tits watch their exit, and do all they can to clean the trees. The merlin builds regularly on the top of the cliffs in the dean at Gilsland. The rough-legged buzzard was a visitant, a few years since. In addition to gnats and midges, the *Simulium* midgē bites severely.

When Gilsland Spa came into vogue does not appear. It was much frequented before 1753, when the third edition of Gibson's Camden was in the press (fol. 1038). Its early name then was Wardrew Spa. Wardrew house was built in 1752, on the site of one much older, and is situated in Thirlwall township, in Northumberland, on a wooded eminence on the opposite banks of the river to the hotel. The poet Burns visited it in June, 1787—

* Introduction, &c., p. lxiv.

"Left Newcastle early and rode over a fine country to Hexham to breakfast, from Hexham to Wardrew the celebrated Spa where we slept." It was at Wardrew that Sir Walter Scott first met with his future spouse. A pane of glass in one of the windows, with Sir Walter's name upon it, said to have been written by himself, was taken out by Mr Hodgson Hinde, when he rented the house, owing to the annoyance caused by the hundreds of strangers who visited the place to see the writing.*

The "Popping-Stone," the scene of his courtship, was duly visited. He has sketched it in the Introduction to "The Bridal of Triermain."

"Come, rest thee on thy wonted seat ;
Moss'd is the stone, the turf is green," &c.

A modern piece of superstition is developed here. The stone is now only one half its original size, portions of it having been chipped off by foolish visitors, under the belief that when placed under the pillows of the unmarried of the fair sex, dreams of their future partners will be vouchsafed to them.†

Not very long since a remnant of well-worship survived here. "Within my own recollection," writes the Rev. G. Rome Hall, "the yearly pilgrimage to Gilsland Wells (there are both a chalybeate and a sulphur medicinal water here) on the Sunday after old Midsummer Day, called the Head Sunday, and the Sunday after it, was a very remarkable survival of the ancient cultus of primitive times. Hundreds, if not thousands, used to assemble there from all directions by rail when that was available, and by vehicles and on foot otherwise. They were wont to walk or drive annually at the summer solstice, even from North Tynedale, the neighbourhood of Wark and Birtley, to Fourstones, and thence by railway to Rose Hill Station, that they might take, unconsciously, it may be hoped, their part in a heathen solemnity."‡

"The Shawes," the name of the hotel, was a farm in the manor of Triermaine, in 1621 and 1633. Wardrew was a farm in 1633.§ Edmund Carrock was tenant of Shawes, 4th Oct., 1609, being one of those who resigned to his lord the claim of tenant right,

* Jenkinson's Guide, p. 61.

† Ibid, p. 68.

‡ On Modern Survivals of Ancient Well-worship in North Tynedale, *Archæolog. Æliana*, N. S. viii., p. 72.

§ Household Book of Lord William Howard, pp. 155, 182, 279, 288-9.

preferred by the border-farmers at that period, alleging that they held their allotments by a fixed tenure for border services.*

The anniversary meeting was held in the King's Arms Hotel, Berwick, October 13th. There were present—the Rev. J. F. Bigge, M.A., Stamfordham, who officiated as chairman; Mr Hardy, Secretary; Mr Middlemas, Treasurer; Revs. William Dobie, M.A., Ladykirk; Ambrose Jones, M.A., Stannington; Duncan McLean, B.D., Allanton; and R. Hopper Williamson, M.A., Whickham; Drs Robert Carr Fluker, Berwick; John Paxton, Norham; and Henry Richardson, Berwick; Lieut.-Col. Crossman, C.M.G., R.E.; Captain Forbes, R.N., and Capt. Norman, R.N., Berwick; Messrs Thomas Arkle, Highlaws; R. G. Bolam and George Bolam, Berwick; Andrew Brotherston, Kelso; M. T. Culley of Coupland Castle; Thomas Darling, Berwick; Robert Douglas, Berwick; James Greenfield, Reston; James Heatley, Alnwick; William H. Johnson, Edinburgh; Peter Loney, Marchmont; W. G. Macdonald, M.A., Berwick; James Nicholson, Murton; Thomas Patrick, Berwick; James Purves, Berwick; Adam Robertson, Alnwick; William Shaw, Eyemouth; John Thomson, Kelso; William Wilson, Berwick; Matthew Young, Berwick.

A number of members from a distance, who had arrived on the previous evening, had enjoyed the advantage of examining Mr Bolam's valuable collection of books and documents relative to Northumbrian history, antiquities and topography. In the morning, by appointment, they went to Spittal to see the artificial manure works of Messrs Crossman and Paulin, and not only acquainted themselves with the processes in the manufacture which the various substances employed undergo, but enjoyed the trip by water across "Tweed's fair river broad and deep," when augmented by the full tide. They afterwards assembled in the Museum, where Col. Crossman in explaining the Map of the old fortifications of Berwick, drew attention to the fact, that Berwick had once a "Rottenrow," which passed Ravensdown from the "Palace" towards another notable place in ancient Berwick.

* Household Book of Lord William Howard, p. 413. At the same period Richard Carrock was occupant of "Lawe Burdoswald," and John Carrock of Wrigarth. Margaret Carrick, whose soubriquet was "Meg of Mumps Hall," who died 4th Dec., 1717, aged one hundred years, "the last of the iron race of the olden time," was probably of this stock. See more about her in "Guy Mannering."

In the course of the day, a number of members visited Mrs Carter's residence in Berwick, to view the numerous drawings and other relics which she has so carefully preserved. While searching among some old family papers recently Mrs Carter came upon two important documents, and these she laid before the members. One paper was a copy of the order of battle given on board the Victory by Nelson, on September 29, 1805, and the other Lord Collingwood's thanks to the officers and seamen the day after the battle, October 22, 1805. These copies were supplied to the commanders of the various ships in the British Fleet, and came into the possession of Mrs Carter's father, Dr Johnston, through her uncle, who was on board the Royal Sovereign, under Lord Collingwood, on the day of the great battle. There was also on exhibition a picture of ancient Berwick (sent for the inspection of the members by Mr E. Willoby), shewing the ruins of the castle, the English gate, the bell tower, &c. Miss Dickinson, Norham, had, as usual, brought a selection of her clever and numerous drawings of plants, as well as specimens of the winter moth in all its stages, from the caterpillar to the full-grown moth. The caterpillar of this moth (*Cheimatobia brumata*) was last year, it will be remembered, very destructive to gooseberries, eating its way into the heart of the berry and ruining the fruit.

At one o'clock the members met in the billiard-room of the King's Arms Hotel; the Rev. J. F. Bigge presiding in the absence of the retiring president, Mr Charles Watson, whom necessary business had called elsewhere. The Secretary then proceeded to read the Anniversary Address, which concluded by Mr Watson nominating the Rev. Thomas Brown, F.R.S.E., Edinburgh, as his successor. The nomination was agreed to, and Mr Brown's letter accepting the office was read. He then read abridged notices of the meetings held throughout the season.

Meetings for 1881 were appointed to be held at the following places:—Dunbar for Belton, Biel, and Presmennan, on the last Wednesday in May; Grant's House and Abbey St. Bathans for the Jubilee Meeting in June; Elsdon and Otterburn, July; Kelso, to meet the Durham and Northumberland Archæological Society, in August; Innerleithen for Traquair and the Glen, in September; Berwick, in October.

The following were duly proposed and seconded, and, along

with those nominated at other meetings during the year, were admitted members of the Club :—Rev. Thomas Ilderton of Ilderton ; Dr Edwin Thew, Alnwick ; Mr Thomas Walby, Alnwick ; Mr William Newton Morrison, New Bewick ; Mr William Alder, Berwick ; Rev. Charles Baldwin, Berwick ; Mr Robert Weddell, Berwick ; Mr George Weatherhead, Berwick. Miss Russell of Ashiesteel was elected an honorary member of the Club.

Mr Middlemas, Treasurer, stated that the total income for the past year had been £99 6s, while the expenditure amounted to £116 odds, leaving a balance due to the treasurer of £5 2s 2d. The Club had £53 on deposit receipt, which, with the accrued interest, was available. The arrears were stated to amount to £45, and, on the suggestion of the treasurer, a resolution was passed unanimously enjoining members to pay their subscriptions regularly when applied for.

Mr Bigge suggested Fungi as a special study for some of the members, who might bring to the meetings selections of edible and poisonous fungi. The suggestion met with general approval.

Mr Brotherston stated that he had found the petty whin, *Ulex Galii* near East Fodderlie, between Rule and Jed waters. Mr Tait of Eglington, a few years since, noticed *Ulex Galii* on Beanley moor, Northumberland. Mr Brotherston brought specimens of *Polytrichum strictum*, Doecleuch, Sept. 9, 1880 ; *Hypnum fluitans*, Skelfhill, Sept., 1880 ; *Sphagnum rubellum*, Primside Bog, March 30, 1879 ; *Jungermannia Floerkii*, Nees., Skelfhill-pen, Sept., 1880 ; *Gymnomitrium concinnatum*, Skelfhill-pen, Sept., 1880.

Mr Watson had sent for exhibition a plain gold ring, which had been turned up by the plough on the farm of Cairncross in 1875. The ring had been caught up by the point of the sock, and was much thinned and rubbed before it was detected. On the inside in a writing hand of the 16th or 17th century, is cut this inscription : “ I bleise god my best abod.” Mr Watson has also a spindle-whorl, which has been painted black, which is labelled : “ Stone for keeping Witches off Cattle, brought from Billie in 1748 to Bankend, by John Landels (1834).”

Five members of the Club have died during the year—1. Capt. Charles Gandy, Alnwick. 2. The Rev. Robert Orange Bromfield, minister of Sprouston, who died at Strathpeffer, August 28th, 1880, in the 37th year of his ministry there, having been

transferred from Lanarkshire, in 1843. He was a native of Bedford. Mr Bromfield was widely known as a pomologist, and took a great interest in horticultural matters generally. In these departments he had few equals, and his contributions to the journals devoted to these subjects were highly valued. The manse garden was a model, and shewed in an unmistakeable manner his unusual skill. Apples of his raising were in great request. He had visited Australia and India and made the tour of the Holy Land. He was a faithful and kind-hearted minister, an elegant and effective preacher, a deeply-read scholar, and a firm friend. References to Mr Bromfield may be found in Mr William Henderson's "Folk-Lore of the Northern Counties," and "My Life as an Angler." 3. John Ord of Over-Whitton, who died 30th September, 1880, in his 70th year; a prominent and useful country gentleman and magistrate. In private life Mr Ord was esteemed as few men are, and his counsel was much sought and ever readily accorded. 4. Alexander Crosbie, M.D., an eminent medical officer in the Royal Navy, and surgeon to the Challenger expedition, who died at Haslar Hospital, Gosport, on the 16th November, 1880, in his 46th year. Dr Crosbie was a son of Mr Thomas Crosbie, long of Kelso Mills, and was educated at the Kelso Grammar School. When on board the Challenger he never neglected any opportunity offered for study and research, and his observations were often fortunate, and always made with discrimination and skill. While on the expedition his native town was not forgotten, and the numerous articles he presented to the Kelso Museum will long be regarded with peculiar pride. 5. The Rev. Samuel Arnot Fyler, Rector of Cornhill, who died November 2nd, 1880, aged 77. Mr Fyler was the eldest son of Samuel Fyler, Esq., of Twickenham, Middlesex, by his second wife, Miss Arnot, a Scottish lady of the family of the Arnots of Balcormo, Fifeshire. The late Hugo and Dr David Boswall Reid were his cousins. In 1834, Mr Fyler was nominated by the Dean and Chapter of Durham to Cornhill, which he held continuously for 46 years. His care for his parish is attested by the restoration of the fabric of his church, and by the improvements of his schools. His only publication was a brochure in 1850, entitled, "A Brief History of Church Rates." He became a member of the Club, June 25th, 1849; and wrote for its "Proceedings," vol. vi., pp. 344-348, "A brief History of

the Village of Cornhill." 6. Mr William Chartres, died at his residence, Summerhill, Ayton, 5th December, 1880, aged 71. He was the second son of Thomas Chartres, who was for a long time a merchant in Berwick, and who was elected mayor of the borough in 1832. His son William was enrolled as a freeman, Jan. 1st, 1830, and served his time as a solicitor. At the time of his death he was one of the oldest solicitors of Newcastle, his admission dating from 1832. Mr Chartres was head of the firm of Chartres, Youll, and Wilkinson, but it is some time since he retired from the active practice of his profession. Mr Chartres had a highly cultivated mind, and was well-known for his amiable and kind-hearted disposition. He was fond of flowers and gardening. Till latterly when he came to reside at Ayton, he had not much opportunity to attend the Club's meetings; but he felt a great interest in the Club's prosperity. He joined the Club, June 25, 1863.

Notes on Relics of Alexander Wilson, Poet and Ornithologist, exhibited at a Meeting of the Berwickshire Naturalists' Club, held at Dunbar, 26th May, 1880. By ROBERT GRAY, F.R.S.E., Secretary of the Royal Physical Society.

(1. *Portrait with Autograph* ; 2. *Letter addressed to Miss Sarah Miller* ; 3. *Original drawing of Hermit Thrush* ; 4. *33 Proof-Plates of Wilson's Work on Birds* ; 5. *Rough Medallion Portrait* ; 6. *Photograph of Wilson's Grave.*)

MORE than 90 years ago Alexander Wilson, the well-known poet and ornithologist, in passing through this town (Dunbar), made the following entry in his journal :—

“Septem. 24, 1789.—This morning rose early to take a view of the town of Dunbar, which is pretty large; the main street, broad and running from north to south, contains the only buildings of any note. The Provost's house closes the view at the north end fronted with a row of trees making a very neat appearance. Several narrow lanes lead down to the shore, chiefly possessed by fishers. At the west end of the harbour they have lately built a battery of stone in the form of a half moon, mounting seventeen twelve-pounders. This is the effect of Paul Jones' appearance in the Firth last war, who came so near this place with some of his ships as to demolish some of the chimney tops and put the inhabitants in a terrible consternation. They are also building a new pier from the battery, which will certainly be attended with a vast expense, and even without affording general content. A little to the west of this are still to be seen the ruins of the Castle of Dunbar, built on a rock that juts into the sea, hollowed with gloomy caves, through which, in a storm, the waves roar horribly; which, joined to the ruins above, forms a most dismal appearance.”

Again on the following day :—

“Septem. 25.—Having done some little business in this place, and there being no other town to the east or south, for a considerable way, have bargained with the master of a sloop with whom I intend to embark for Burntisland, in Fifeshire, a town about thirty miles from this and almost opposite Edinburgh.”

Then a day later :—

“Septem. 26.—Went on board early this morning for Burntisland with a good gale astern; passed the Bass and several

other small islands, and landed at Burntisland after a pleasant passage of six hours."

Wilson was then a Pedlar from Paisley, in very humble circumstances, and gave but little indication of possessing such talents as distinguished him in after life. We all, I daresay, know his subsequent history as given by various biographers; how he was compelled to leave his native town and proceed to America, in which country he landed without a shilling and without a friend; how he resumed his business as a pedlar, and how, after many vicissitudes, he ultimately betook himself to the study of American Birds, and produced a work which has rendered his name famous throughout the world. The descriptive power shewn in this book has never been surpassed; and when it is remembered that but few works on the Birds of America had previously been written, Wilson's extraordinary courage in carrying out the task he had chosen for himself seems, even at this distance of time to be one of the most wonderful instances of enthusiasm on record. The years of solitude he spent in the woods and wastes of his adopted country, the many thousands of miles he travelled by river and by land in quest of birds, and the triumphant results of his wanderings in the publication of his great work, of which America is so justly proud, are incidents in the life of Wilson, which throw an air of romance over his scientific career, and invest with a peculiar interest all that belonged to him. Impressed with the truth of this, I have the pleasure of submitting for the inspection of the members of the Club on the occasion of our meeting at Dunbar, one or two memorials of this remarkable man. These are mainly a few proof plates of his "*American Ornithology*, or the Natural History of the Birds of the United States," and an original drawing of the Solitary Thrush (*Turdus solitarius*) which he had cut so as to replace one of the figures in another of his plates. The relics formed part of the contents of a trunk left by his will to Miss Sarah Miller—a lady to whom Wilson would in due time have been married. This trunk contained among other things his deed of settlement, pistols, saddle bags, paint box, brushes, and colours, books, impressions of the plates for his work on American Birds, original drawings, &c. Many of these articles which were left by Wilson himself I have seen along with other relics that had subsequently been placed in the trunk by Miss Miller, who afterwards became Mrs Rittenhouse, and who preserved the whole with jealous care until her death. Of these, I have brought to the meeting his portrait with autograph and a letter written by him to the lady in question, during one of his long excursions in search of material for his great work. They were given to me by the late Dr W. P. Turnbull of Philadelphia, who purchased the trunk and the whole of its contents from the widow of a son of Mrs Rittenhouse, in 1869. I remember examining with much interest a presentation copy of his Poems, which was found among Mrs Rittenhouse's effects, and which was full of annotations in Wilson's handwriting. I observed that the author, with a sensitive regard to his former occupation, had erased with his knife every reference to his tramps as a pedlar. His evident desire was that he should be looked upon as a lover of birds, and not long afterwards when the hand of death was upon him, this desire was even more apparent in his oft expressed wish that he might be laid where the birds might sing over his grave.

List of Plants from the neighbourhood of Gordon.

THE first portion of this List has been drawn up by Dr CHAS. STUART, Chirnside, with the co-operation of Mr SADLER, of the Plants collected on the day of the Club's meeting at Gordon, in June, from the Mellerstain Woods and Gordon Moss :—

Linnæa borealis, Mellerstain woods.

Goodyera repens, do.

Listera cordata, do.

Vicia angustifolia, on edge of right hand bog from Gordon.

Drosera rotundifolia.

Mollinia cœrulea.

Hydrocotyle vulgaris.

Pedicularis palustris.

Briza media.

Ajuga reptans.

Viola palustris.

Orchis latifolia, colours from pure white and lilac to deep purple.

O. latifolia, var. *incarnata* (bogs).

Comarum palustre.

Menyanthes trifoliata.

Myosotis cæspitosa.

M. repens.

M. versicolor.

Ranunculus flammula.

Triglochin palustre.

Valeriana officinale.

Montia fontana.

Lythrum salicaria.

Genista anglica.

Mentha aquatilis.

Eriophorum vaginatum.

E. polystachion.

Sparganium natans.

Habenaria bifolia.

Hippuris vulgaris.

Callitriche platycarpa.

Carex ovalis.

C. paniculata.

C. pulicaris.

C. panicea.

C. aquatilis.

C. glauca.

C. ampullacea.

C. stellulata.

C. teretiuscula, rare.

C. curta.

C. pallescens.

Catabrosa aquatica, in a ditch running north from left hand bog (new).

Utricularia minor, in water holes, west end of right hand bog from Gordon (new).

Stellaria glauca, every where in the bog, in great beauty.

Botrychium Lunaria, length fourteen inches, length of flowering stem eight inches, breadth one-and-half inches; right hand bog.

Lemna trisulca (new).

L. minor.

Potamogeton natans.

P. praelongus.

P. polygonifolius.

P. pusillus.

Galium uliginosum.

Juncus acutifolius.

Salix repens.

var. argentea.

var. fusca.

Hypnum crista-castrensis.

Sphagnum cymbifolium.

Bryum ?

Mr BROTHERSTON, who had been early astir, brought to the meeting specimens of *Linnæa borealis*, *Lemna trisulca*, *Sparganium minimum*, *Chara fragilis*, *Lastrea spinulosa*, and *Hypnum crista-castrensis*, *Stellaria glauca*, *Goodyera repens*, which he had that morning picked up in the course of a walk through part of Mellerstain Woods and Gordon Moss, and reported that he had seen orpine (*Sedum telephium*) growing on the roadside. In the Moss, Mr Brotherston saw many forms of *Salix cinerea*, *S. aurita* and *repens* with their hybrid *ambigua*. *S. pentandra*, especially the narrow-leaved form, was plentiful ; *nigricans* and *phylicifolia* rarer. A single tree of *S. decipiens* was observed on the old margin of the bog.

On the 3rd of August, the Rev. WILLIAM STOBBS in examining Huntly wood, to his great surprise and delight, came upon a considerable patch of *Linnæa borealis* in the wood, which furnishes a new locality for that botanically classical plant in the South of Scotland. Just beside the *Linnæa* he came upon the *Goodyera repens* also. In the same situation he got the *Pyrola minor*. On the 18th of August, Mr Stobbs went to the woods in the north-east of the parish behind Fawside, and gathered *Listera ovata*, and a very luxuriant form of a *Primula*, which is either a cowslip or an oxlip, but not being in flower it could not be determined. *Lycopodium clavatum* grows in one of the plantations near the manse.

List of Lepidoptera taken in the neighbourhood of Gordon Moss. By Mr ROBERT RENTON, F.R.S.

THIS list comprises the species captured in or near Gordon Moss ; and the ground of operations includes two miles west of Greenknowe Tower, and a quarter of a mile on each side of the Berwickshire Railway :—

DIURNI.

Papilio Brassicæ.
 ——— Rapæ.
 Anthocharis Cardamines; also
 at Humebyres.*
 Argynnis Paphia.
 Vanessa Urticæ.
 ——— Atalanta.
 ——— Cardui.
 Erebia Blandina.
 Satyrus Semele.
 ——— Janira.
 ——— Hyperanthus.
 Chortobius Pamphilus.
 Polyommatus Phlæas.
 Lycæna Alexis.

NOCTURNI.

Hepialus Hectus.
 ——— Lupulinus.
 ——— Velleda.
 ——— Humuli.
 Nudaria Mundana.
 Chelonia Plantaginis.
 ——— Caja.
 Arctia Menthastræ.
 Orgyia Fascelina.
 Bombyx Rubi.
 ——— Quercus.
 Saturnia Carpini.

GEOMETRÆ.

Rumia Cratægata.
 Metrocampa Margaritata.
 Ellopiæ Fasciaria.
 Selenia Illunaria.
 Odontopera Bidentata.
 Boarmia Repandata.
 Gnophos Obscurata.
 Cabera Pusaria.

GEOMETRÆ, *continued*.

Macaria Liturata.
 Halia Wavaria.
 Fidonia Atomaria.
 ——— Piniaria.
 Lomaspilis Marginata.
 Hybernia Rupicaprararia.
 Larentia Didymata.
 ——— Cæsiata.
 ——— Pectinitaria.
 Emmelesia Affinitata.
 ——— Albulata.
 Melanippe Tristata.
 ——— Unangulata.
 ——— Montanata.
 Campptogramma Bilineata.
 Cidaria Miata.
 ——— Russata.
 ——— Immanata.
 ——— Suffumata.
 ——— Prunata.
 ——— Fulvata.
 Eubolia Cervinaria.
 ——— Mensuraria.
 ——— Palumbaria.
 Anaitis Plagiata.

DREPANULIDÆ.

Platypteryx Falcula.

PSEUDO-BOMBYCES.

Notodonta Ziczac.

NOCTUÆ.

Acronycta Tridens.
 Gortyna Flavago.
 Hydræcia Nictitans.
 Xylophasias Rurea.
 ——— Polyodon.
 Charæas Graminis.

* A specimen of this was captured at Broomdykes by Dr Stuart, July 3, 1880.—J. H.

NOCTUÆ, *continued.*

Luperina Testacea.
 Apamea Basilinea.
 Miana Strigilis.
 ——— Fasciuncula.
 Celæna Haworthii.
 Caradrina Cubicularis.
 Agrotis Corticea.
 Tryphaena Janthina.
 ——— Orbona.
 ——— Pronuba.
 Noctua Plecta.
 ——— C-nigrum.
 ——— Rubi.
 ——— Xanthographa.
 Trachea Piniperda.
 Tæniocampa Gothica.

NOCTUÆ, *continued.*

Tæniocampa Instabilis.
 ——— Stabilis.
 Oporina Croceago.
 Polia Chi.
 Hadena Adusta.
 ——— Dentina.
 ——— Oleracea.
 Anarta Myrtilli.
 Heliodes Arbuti.
 Plusia Chrysites.
 ——— Bractea.
 ——— Iota.
 ——— V-aureum.
 ——— Gamma.
 ——— Interrogationis.
 Euclidia Mi.

A List of Chalcididæ, Proctotrupidæ, and Mymaridæ collected in Berwickshire, and near Newcastle-upon-Tyne.

By JAMES HARDY.

MANY years ago I made a collection of the smaller parasitic Hymenoptera, chiefly Chalcididæ and Proctotrupidæ, near Penmanshiel, Berwickshire, and near Newcastle-on-Tyne. These were submitted to the late FRANCIS WALKER, Esq., who possessed the key to the nomenclature of these minute insects. The specimens are in my collection. As it is not probable that any one at present will take up the study, I give these lists as a small contribution to a knowledge of the distribution of the species. Except a few Northumbrian Chalcididæ collected by the late Dr Greville of Edinburgh, at Twizell House, and described by Mr Walker in the early volumes of the "Annals of Natural History," there are no Border species on record. The Newcastle insects were chiefly taken by the sides of the Derwent above Winlaton Mill, in the Ravensworth woods or grounds, and on the coast near Marsden. I have only added the authorities, so far as I know them, for the names that belong to other authors than Mr Walker.

BERWICKSHIRE.

CLASS INSECTA.

ORDER HYMENOPTERA.

FAM. CHALCIDIDÆ.

Eurytoma curta.
 ——— Argele.
 Isosoma angustatum.
 ——— Laothoe.
 Decatoma cynipsea, *Boh.*
 = *Aspilus*, *Walk.*
 Callimome flavipes.
 ——— varians.
 ——— confinis.
 ——— mutabilis.
 ——— apicalis.
 ——— versicolor.
 Asaphis ænea, *Nees.*
 Cyrtogaster vulgaris.
 Pachylarthrus flavicornis, *Hal.*
 ——— patellanus, *Dalm.*
 Dicyclus fuscicornis.
 ——— cinctipes.
 Toxeuma Ericæ.
 Merismus rufipes.
 Lamprotatus rufipes.
 ——— obscurus.
 ——— maculatus.
 ——— fuscipes.
 ——— Babilus.
 ——— splendens, *Westw.*
 ——— viridis.
 Seladerma convexum.
 Semiotus diversus.
 Platymesopus tibialis.
 Pteromalus prasinus.
 ——— modestus.
 ——— dubius.
 ——— deplanatus, *Nees.*
 = *domesticus*, *Walk.*
 ——— epistenus.
 ——— perpetuus.

Pteromalus viridulus.
 ——— microcerus.
 ——— subniger.
 ——— muscarum, *L.*
 ——— hemipterus.
 ——— albipennis.
 ——— bellus.
 ——— constans.
 ——— discolor.
 [Found in a house.]
 ——— conifer.
 ——— Ariomedes.
 ——— Naubolus.
 ——— Leodocus.
 ——— Vibullius.
 ——— Leogoras.
 Cheiropachus pulchellus.
 Encyrtus melanopus, *Hal.*
 Entodon Zanara.
 ——— Eubius.
 ——— Alceus.
 Eulophus Iapetus.
 ——— Myodes.
 ——— Ianthea.
 ——— Alaparus.
 ——— Leodomas.
 ——— Mandron.
 ——— Amempsinus.
 ——— Westwoodii, *Step.*
 ——— sericeicornis, *Nees.*
 = *Eneugamus*, *Walk.*
 Cirrospilus elegantissimus,
Westw.
 Tetrastichus Sotades.
 ——— Mutilia.
 ——— Anteus.

NEWCASTLE-UPON-TYNE.

FAMILY CHALCIDIDÆ.

Eurytoma Abrotani.	Pteromalus modestus.
———— apicalis.	———— dubius.
———— brevicollis, <i>Hal.</i>	———— intermedius.
Isosoma verticillata, <i>Ill.</i>	———— gracilis.
———— angustipenne.	———— sequester.
———— minor.	———— famulus.
———— angustatum.	———— micans.
———— dissimile.	———— constans.
———— depressum.	———— pulchripes.
———— Laothoe.	———— Mutia.
Callimome terminalis.	———— Ceropasades.
———— nigricornis.	———— Carcinus.
———— mutabilis.	———— Amphimедon.
———— posticus.	———— Nestocles.
[Bred from Spiræa Ulmaria.]	Cercobelus Jugœus.
Asaphis ænea, <i>Nees.</i>	Encyrtus Pappus.
Gastrancistus vagans, <i>Westw.</i>	———— Batillus.
———— Panares.	———— Phithra.
Pachylarthrus flavicornis, <i>Hal.</i>	Aphelinus basalis,
Lamprotatus rufipes.	Entedon gemmeus, <i>Westw.</i>
———— obscurus.	———— Mera.
———— maculatus.	———— Sparetus.
———— hortensis, <i>Curtis.</i>	———— Eubius.
———— fuscipes.	———— Epigonus.
———— Babilus.	———— Coenus.
———— splendens, <i>Westw.</i>	———— Acamas.
———— chrysochlorus, <i>Hal.</i>	———— Lycœus.
———— annularis, <i>Curt.</i>	———— Alcœus.
———— fuscipennis.	———— Phruron.
———— obscuripennis.	———— Ergius.
———— tarsalis.	———— Abdera.
———— diffinis.	———— Afranius.
———— Scoticus.	———— Lycambes.
Seladerma Lalage.	Euderus Amphis.
Isocyrtus lætus.	Elechestus Aphaca.
Pachyneuron Pythocles.	Eulophus ramicornis, <i>Fab.</i>
Micromelus pyrrhogaster, <i>Hal.</i>	———— Callidius.
Meraporus graminicola.	———— Hedila.
Pteromalus fasciiventris, <i>Westw.</i>	———— Acalles.
———— tibialis, <i>Westw.</i>	———— Dropion.

Eulophus Pisidice.	Tetrastichus Evonymellæ,
———— Meriones.	Bouche.
———— Metalarus.	———— Xixuthrus.
———— Amempsinus.	———— Brunus.
———— Rhæcus.	———— Rapo.
———— sericeicornis, Nees.	[Bred from Spiræa Ulmaria.]
———— =Eneugamus, Walk.*	———— Nerio.
———— Euedoreschus.	———— Tymber.
Cirrospilus vittatus.	———— Hippis.
———— elegantissimus,	———— Emesa.
Westw.	———— Zoilus.
———— Diallus.	———— Orsillus.
	———— Rhode.

FAM. PROCTOTRUPIDÆ.

Aphelopus Daos.	Platygaster Sonchis.
Drymus Alorus.	———— Roboris.
Antæon Penidus.	———— Acrisius.
Bethylus cenopterus, Latr.	———— elongatus.
———— fuscicornis, Jur.	———— Tisius.
Labeo excisus.	———— Orcus.
Microps Rubi.	———— Dermades.
Teleas Lycaon.	———— niger.
Platygaster ruficornis, Latr.	———— Olorus.
———— Nereus.	———— Otreus.
———— Tarus.	———— Manto.
———— Orus.	———— Cliodæus.
———— Cotta.	———— Iolas.
———— Catillus.	

FAM. MYMARIDÆ.

Lymænon litoralis.
 Polynema fumipennis.
 ————— atratus.

Besides these I find among the minute Ichneumons, *Platymischus dilatatus*, *Hemiteles areator*, *Pezomachus agilis*, *P. vagans*, and *P. bicolor*, from the Newcastle district.

* I give the synonym on the authority of the late A. H. Haliday, Esq., a most accomplished entomologist, with whose correspondence I was long favoured.

A Notice of some rare Books by Morpeth Authors, contained in the Library of the Morpeth Mechanics' Institution.
By Mr JAMES FERGUSSON, Morpeth.

In the library of Morpeth Mechanics' Institution there is a small collection of rare and interesting works by Morpeth authors. They were given by William Woodman, Esq., Stobhill, as part of a memorial gift by the Barony of Morpeth, in remembrance of George W. F., seventh earl of Carlisle. They are as follows :—

“A NEW HERBALL, wherin are conteyned the names of Herbes in Greke, Latin, English, Duch, Frenche, and in the Potecaries and Herbaries Latin, with the Properties, Degrees, and Naturall places of the same, gathered and made by Wylliam Turner Phisicion unto the Duke of Somersettes Grace. Imprinted at London by Steven Mierdman, Anno 1551. Cum priuilegio ad impremdum solum. And they are to be solde in Paulles Churchyarde.

“THE SECONDE PARTE OF UUILLIAM TURNERS herball, wherin are conteyned the names of herbes in Greke, Latin, Duche, Frenche, and in the Apothecaries Latin, and somtyme in Italiane, wyth the vertues of the same herbes, wyth diuerse confutations of no small errours, that men of no small learning have committed in the intreatinge of herbes of late yeares.

“Hereunto is ioyned also a booke of the bath of Baeth in Englande, and of the vertues of the same with diuerse other bathes most holsum and effectual, both in Almany and Englande, set furth by William Turner Doctor of Physic. Imprinted at Collen by Arnold Birekman. In the yeare of our Lorde MDLXII.

“A BOOKE OF THE NATURES AND properties, as well of the bathes in England as of other bathes in Germany and Italy, very necessary for all seik persones that cannot be healed without the helpe of natural bathes, gathered by William Turner Doctor of Physik. Imprinted at Collen in the year of our Lorde MDLXII.”

“THE NAMES of herbes in Greke, Latin, Englishe, Duche and Frenche wyth the commune names that Herbaries and Apotecaries use. Gathered by William Turner.”

The former of these two volumes is a handsome well-preserved folio, and includes the first and second parts of the Herbal and the Book of the Baths. The late Sir Walter C. Trevelyan, Bart.,

of Wallington, had a copy of the second part dated 1568, but on comparing it with the copy here described, he found it was the same edition, even to the "Fautes and erreurs," with a new title page. Along with Sir Walter's copy of the second part, there was bound up a third part of the Herbal. Sir Walter got his copy at the sale of the library of the Rev. John Hodgson, the Historian of Northumberland. The second of the two volumes is a small (duodecimo) book of 166 pages. It is dedicated "To the mooste noble and mighty Prince Edward by the Grace of God Duke of Summerset," &c., &c., and is dated from "Your Grace's House at Syon, Anno Dom. MCCCCXVIII., Martii XV." The imprint is at the end as follows:—"Imprinted at London by John Day and Wyllyam Seres, dwellynge in Sepulchres Parish at the sign of the Resurrection, a little above Holbourne Conduite."

"A Brief and General ACCOUNT of the most necessary and fundamental Principles of Statics, Mechanics, Hydrostatics, and Pneumatics; adapted more especially to a course of experiments perform'd at Morpeth, in the County of Northumberland. By John Horsley, A.M. Newcastle upon Tine: printed by John White for the Author."

This is a small 12mo of 72 pages with MS. additions respecting the Author.

"VOWS IN TROUBLE, or a Plain and Practicall Discourse concerning the Nature of Vows made in Trouble and the Reasonableness and necessity of a faithful Performance of them. By John Horsley, A.M. London: Printed for Richard Ford, at the Angel in the Poultry, near Stocks Market, and sold by R. Akenhead, Bookseller at Newcastle, 1729."

This volume is of the same size as the former, and consists of 108 pages.

"An Historical Essay on the State of Physick in the Old and New Testament, and the Apocryphal Interval: with a particular account of the cases mentioned in Scripture and observations upon them. To which is added, a Discourse concerning the duty of consulting a physician in sickness. By Jonathan Harle, M.D. London: Printed for Richard Ford at the Angel in the Poultry, near Stocks-Market 1729."

With it are bound up—

"Two Discourses: 1. On the Frailty of Man. 2. On Conformity

to Christ. By the late Reverend and Learned Jonathan Harle, M.D. To which are added Hymns and Psalms, by the same Author. Published at the request of many of his hearers, with an account of his Life, and a Sermon preached on occasion of his death. By John Horsley, M.A. London, Printed for Richard Ford at the Angel in the Poultry, near Stocks-Market 1730."

This volume is an octavo, the first part containing 180 pages, and the second 132. Richard Ford appears to have been the Nonconformist publisher at that time, for on a fly leaf are advertised five works, among which there is "Logick" by I. Watts, D.D., just published.

Along with the books described there is a volume of Reprints from Hodgson's Northumberland, containing "Memoirs of the Lives of Thomas Gibson, M.D., Jonathan Harle, M.D., John Horsley, M.A., F.R.S., and William Turner, M.D."

The Keyheugh and its "Wishing Well." By Mr THOMAS
ARKLE.

IN the Parish of Elsdon, about a mile south of Midgey Ha', on a steep hill called Darden, is a perpendicular precipice of freestone rock, which is a striking object from the Elsdon and Rothbury road, at a point a little to the east of Graslees Mill. The rocky face extends to a considerable length, the greatest height being about sixty feet. On the southern or higher side the ground is level with the top of the cliff, whilst below a large area is covered with detached fragments of rock, of all sizes, scattered about in the wildest confusion, the whole place presenting clear indications of the tremendous power of glacial action.

Such is the wild and romantic place called Keyheugh, which, though now lonely and deserted, was in olden times the attractive Sunday resort of the young people resident in the adjacent neighbourhood. At a little distance from the main precipice is a Well, on the bottom of which, a century ago, might always have been observed a number of pins, or as my informant, who had visited the place in his youthful days, expressed himself "a heap of pins," each visitor dropping in one to further the fulfilment of wishes silently breathed over the magic fountain, or as an offering to propitiate the *genius loci* for the unauthorised intrusion into his secluded and romantic territory.

The name Keyheugh is probably derived from the Saxon words *caeg*, a keyed or blocked-up place, and *hou*, or *heugh*, a steep and rugged hill; whilst *Darden* comes from the British *dwr*, or *dur*, water, and *dun* a hill, in corroboration of which latter etymology a lake called Darden Lough yet remains in the hollow formed by the two highest ridges of the moor.

Access to Keyheugh in a straight line from the point on the Elsdon and Rothbury road, from which it is seen, is toilsome and tedious; but from Midgey Ha' the approach is comparatively easy.

Highlaws, Morpeth, 30th Oct., 1880.

Notice of Treasure Trove, February, 1880. By J. J.
VERNON, F.S.A., Scot., Hawick.

IN February last, whilst a shepherd at Langhope, parish of Kirkhope, Selkirkshire, was going his rounds, he discovered in a drain a bronze pot partially uncovered by the action of the water. Upon unearthing his find it was seen to be of bronze, urn-shaped, having three legs, and lugs for handles, but without lid when discovered. It is ten inches deep, seven inches wide at the mouth, and twenty-nine in circumference at the bulge, the feet being four inches long. The contents proved to be of considerable value, as it contained nearly a stone-weight of coins, fibulæ, &c. The coins were principally silver pennies of Alexander III., John Balliol, and Robert Bruce of Scotland, and of the contemporary kings of England, besides a number of pence struck on the Continent. What jewellery there was may never be known, but there were disposed of in Hawick two silver buckles of excellent workmanship and design—see Plate—the larger of which weighed 615 grains, and the other 244 grs. There was also a finger ring of silver having the inscription JESU NAZAR +; a massive silver pin, and a portion of plate, use unknown. The finder handed over the pot and its contents to his master, who proceeded to realise its value (!) by disposing of the coins by the pound weight. Such a “find” could not long be kept secret, and it is satisfactory to know that the proper authorities succeeded in recovering the bronze vessel and some of the coins and jewellery, which, in course of time, will find their way into the National Collection of Antiquities in Edinburgh.

On the Effects of the Winter of 1879-80, on Animal and Vegetable Life on the Borders.

BERWICKSHIRE.

INTRODUCTORY.

JUDGING from my own experience, I did not expect that the winter of 1879-80, would be so calamitous to out-of-door vegetation, as I soon came to know from my friends and correspondents it turned out to be. This state of matters has obliged me for consistency's sake to do much of last year's work over again. I have now to thank those non-members of the Club, who paid such ready attention to my questionings, or who have aided those members who kindly lent me their assistance. Situations near the sea-coast have formed no part of the inquiry, as most of them escaped harm; but a few examples have been admitted. If any grievous cases have been omitted, we shall hear of them subsequently. I feel particularly grateful to those gentlemen in the Tyneside district, nearly all of them strangers, who have given such a minute and valuable account of what happened in that neighbourhood; of which we would have remained wholly uninformed, but for their endeavours to furnish a complete statement. The reports on the valleys of the Coquet, the Aln, the Glen, and the Till, are almost exhaustive. That there is so little from the Wansbeck is from want of acquaintance with that part of the country. North of the Borders the examples are as typical as could be obtained.

My own observations for this year have been on a small scale. At Renton House, which is sufficiently elevated to stand above the fog that gathers in the valley of the Eye, on Jan. 7, 1880, some evidences of December's severity had become manifest. *Cotoneaster microphylla* and *Jasminum nudiflorum*, on the front of the house, where they are much exposed to the bitter frost winds, were much scorched. The Ivy was untouched, but a Holly hedge was externally withered. *Aucuba Japonica* in the shade was nearly killed to the ground; but bushes fully exposed were unimpaired. The Furze by the post-road sides near Grant's House had been quite browned by the frost and the piercing winds. With the advance of the season, it became evident that Furze on both sides of the valley of the Eye had been completely blighted, and shewed no symptoms of verdure. Broom is a hardier shrub than the Furze, and some of it escaped. The top twigs of Ashes, Oaks, and Sallows, suffered between Grant's House and Coveyheugh; as appeared by the scanty foliage. At Grant's House there was very little fruit. Hawthorns and Laburnums were most meagre in blossom, even in the most sheltered grounds.

At Dunglass, the wood of the previous year in fruit trees did not ripen, and in consequence of this and the destruction of fruit-spurs, fruit-crop was very deficient. An *Araucaria* was killed there, and others were very much scorched, and there was, as might be expected, a considerable shrivelling of the leaves of evergreens. Myrtles in the open air still survive at Dunglass. Several of the fine old Hollies in the Pease Dean woods were injured, although the most of them have escaped. In June when passing by the Railway, I observed some Oaks between Houndwood and Reston, leafing only half way up the stem; at Chirnside Station an Elder hedge had been killed, and some wayside trees, either Oak or Ash, were destitute of foliage; at Edrom Station, Laurestines, Oaks, Broom, Poplars, and Yews had either been cut down, or were shattered. At Marchmont, the shape of the fine Hawthorns was impaired, either from dead blanks, or a deficiency of foliage. Furze was killed in the woods near Legerwood. The shew of wild Rose blossoms in the end of June was most profuse and beautiful, and "dog-hips" were plentiful in the autumn, and were untouched by any bird. Many luxuriant *Rosa canina* on the sea-coast here were killed to the root, but developed strong new shoots. In Bowshiel dean, Furze was blighted both on the north and south sides; Oaks were shattered at the summits of shoots on the low ground near the burn, and were but sparsely foliated. Many Juniper bushes were killed, and most of the underwood of old tall Junipers dropped off; but on exposed hill-sides the Juniper grew as vigorous as ever. At Dunbar several Lombardy Poplars lost their tops; at Prestonkirk, Laurels were rendered very unsightly; and the Furze hedges at Tynninghame were cut to the ground. The fine Holly hedges there are pining away with gangrene, but none of them were blighted. I saw the old Walnut and Laburnum near the garden gate, putting forth their last efforts, in a few tufts of leaves, before the final collapse. A second growth of twigs and foliage has been pretty general in almost every wood.

Missels, Song-thrushes, Wrens, Tits and Blackbirds continued scarce all the year. The Cuckoo and the Gray and Pied Wagtails were also scarce. Fieldfares, that have returned in autumn, are few in number; not more than a dozen were seen here. There is no decrease of the number of Larks anywhere. Starlings are fewer. Hedge-sparrows (*Accentor modularis*) have multiplied; and Domestic Sparrows and Green Linnets are on the increase. I met with no instances of birds perished during the winter.

JAMES HARDY.

Oldcambus by Cockburnspath, 1880.

The Effects of the Severe Cold of the Winter 1879-80, in Berwickshire. By CHARLES STUART, M.D., Chirnside.

August 24th, 1880.—The unprecedented cold experienced in the district around Chirnside in Dec. 1879, has left behind it effects, which will not be obliterated for many years to come. The Oak and the Holly were never, in the memory of man, so nearly killed, in situations near the rivers. At present, in low lying places, the appearance of the Oaks is very remarkable.

The great branches are nearly killed, while here and there great tufts of abnormally-sized leaves have made their appearance within the last six weeks. The trunks are densely clothed with a forest of shoots, where previously a leaf was never seen. In some instances the trees seem dead entirely. I walked through the park at Swinton House in the beginning of July, and near the Leet especially, remarked the destruction the cold had caused to the fine old Oaks, many of them centuries old. At that time there were no appearances of fresh growth, but I daresay now, there will be a tufty springing of young shoots, which another severe frost would undoubtedly finish entirely. In similar situations Standard Hollies are killed to the root. A fine row of them which grew on the bank above Hutton Bridge, which, in ordinary years, were shining at Christmas with scarlet berries, were, in December last, killed to the ground. No shoots having shown themselves from the roots this summer, I thought they were killed outright, but within the last few weeks the tender green shoots are showing themselves. Whether the wood will ripen to enable them to stand the winter remains to be seen. At Blackadder gardens, where, on the 4th December, the exposed thermometer registered 23° below zero, the destruction to shrubs, trees, and fruit trees has been very great; Peach trees being killed into the ground—Standard Apples the same—both planted for long periods. Common Laurels, Rhododendrons, Pinuses, &c., are utterly ruined. On the opposite side of the Blackadder, at Allanbank, situated higher up on the bank, the thermometer registered 13° below zero; while at Kelloe House it shewed 17° below zero. The situation at Allanbank is very similar to Blackadder garden; and had the instrument been in the garden instead of at the house, the temperature observed would have been as low as that at Blackadder. At Ninewells, on the Whitadder, the mercury was in the bulb of the instrument at 8° below zero. The temperature at Chirside Bridge was 6° below zero—while on the hill, out of the rind, the instrument was never much below zero. It was near the river where the frost rind lay, that the low temperatures were observed. On the Tweed and Teviot, this was well seen, where at Springwood Park and Ormiston, very low temperatures were registered. The Common Ivy is everywhere killed in low situations, and many a tree is denuded of its ancient friend. The Oak, the Holly, and the Ivy, three plants we are accustomed to associate in our minds with everything that is hardy and sturdy, seem to be the most remarkable instances of the damage caused by the frost. All three have suffered equally. No such state of matters has ever been observed by the oldest men now living.

A small bird was observed frozen to death while drinking from a water-pipe. The water froze in an icicle and attached the bird, so that it could not again move. This was observed at the paper works near my house. It will take many years before the Thrush will be as plentiful as of yore, and other small birds have also decreased in numbers. During the snow-storm in December, three persons in this district perished in one week from exposure, and many very severe cases of frost-bite were treated at the time. I think I have given you sufficient proof of the stinging cold we experienced, which I hope may never in our time again be felt by any of us.

Oct. 21, 1880.—To-day, when out driving I picked an Oak leaf, dislodged by the frost and wind, measuring 11 inches in length, and $7\frac{1}{2}$ in breadth at its widest part. I have been watching them in their green state, as I never saw them so large before.

Dec. 9.—In all shrubberies I observe the Mahonias to have suffered less than other shrubs from the frosts of the last three winters. And, if we consider how attractive this evergreen is, whether in flower or in fruit, it is worthy of extensive planting, from its great hardiness. The *Cotoneaster microphylla*, which covered the entire front of Sunwick farm-house, and was when in berry, a most beautiful object in winter, is completely killed by last winter's frost.

At Blackadder House, where the temperature marked 23° below zero, the consequences were most disastrous. The Peach trees were killed to their roots—trees that were planted by Lady Boswall's father 50 years ago and more; and Apricot and other fruit trees, which had retained their healthy condition upon the walls for a long series of years, were killed outright. The Bay Laurels, Portugal Laurels, Rhododendrons, Hollies in many instances, Wellingtonias, Araucarias, and Deodar Pines were all killed. An English Yew which had been planted on the nativity of Lady Boswall, and had attained to considerable dimensions, was also killed. Many Oaks are dead; others sustained the loss of the previous summer's shoots, and two last year's wood.

Frost in November, 1880. BY THE SAME.

No one ever recollects the low temperatures we have experienced lately in the month of November. On the hill at Chirnside 350 feet above sea level, my thermometers were never lower than 21° . At Chirnside Bridge, on the 20th, the instrument registered 10° ; on 22nd (Sunday), I saw the thermometer there at 6 p.m. at 15° , and on the morning of the same day here 21° were registered. 4° were registered at Kelloe on the same morning, and 3° at Blackadder, or 29° of frost. Symptoms of thaw shortly supervened, which became more pronounced on the 23rd,—since we have had rain and very high S.W. gales till the end of the month. Temperature high for the season on the 29th November.

Notes on the Effects of the Frost of the last three seasons at Blackadder. BY THE SAME.

On the 15th Feb., 1881, I visited Blackadder for the purpose of inspecting the damage done by frost there to shrubs and trees, to compare with that done at other places. I could not have credited had I not seen the destruction caused by the extreme temperatures, which seems to have been worse in the Vale of the Blackadder than elsewhere in the county. All the evergreens—Laurels, Portugal Laurels, and Hollies, with the Rhododendrons are killed to the ground. The Yews, Irish Yews, *Cupressus Lawsoniana*, *Pinus Pinsapo*, and *Abies Douglassi*, are fatally damaged, many killed outright. *Picea Nordmanniana* fine and untouched. *Picea nobilis*, Wellingtonia and

Araucaria, *Deodars*, *Cedrus Libani*, Boxwoods, Privets, Ivies all killed. Weymouth Pine blasted by frost. Arbor Vitæ alive but much browned. *Cupressus Lawsoniana*, var. *erecta*, *Pinus Cembra*, *Abies Canadensis* alive, but much blasted. Oaks in low situations killed. Yew planted when Lady Boswall was born, killed into the ground. Fine Tulip tree injured. Walnut tree killed entirely. 190 fruit trees in garden, consisting of Plums, Apples, Pears, Peaches, &c., had to be dug up and removed. Both wall trees and standards suffered. Over 70 trees in garden at Allanbank, situated on the opposite side of river, had to be dug up completely dead. The fine old Ivy so ornamental at the gate and on some of the old trees, was completely killed. Fifteen years judicious planting by the late Mr Rae is completely wrecked, and the beauty of the place greatly destroyed for many years to come. At Kelloe, about a mile higher up the stream, the gardener informs me that there is not an evergreen left—that on the night of the 26th January, when the thermometer was 20° below zero, the Limes and Oaks were heard to rend with a loud report from the expansion of the sap. This was heard also at Blackadder and Kimmerghame, where there is also great destruction to trees.

The Great Frost of January, 1881.

Observations taken at Blackadder Gardens by Mr REID :—

DATE.	MAX.	MIN.	DATE.	MAX.	MIN.
1	34°	30°	17	18°	22° below zero*
2	42	37	18	25	12
3	44	33	19	35	13
4	41	30	20	32	13
5	40	21	21	31	3
6	42	24	22	25	1
7	39	19	23	33	24
8	35	20	24	32	10
9	25	13	25	28	3 below zero.
10	30	15	26	35	16 below zero†
11	30	21	27	24	12
12	26	13	28	27	17
13	30	24	29	36	24
14	34	6 below zero.	30	34	29
15	29	1 below zero.	31	45	30
16	25	12 below zero.			

[At the half-yearly meeting of the Scottish Meteorological Society, March 3, 1881, Mr Buchan, the Secretary, said that the thermometer at Blackadder was an exposed one, and could not be taken into account in making comparisons with other places.]

* Wood-pigeons observed to fall off the trees frozen and starved. Many cases of frost bite.

† Wood-pigeons allowed themselves to be caught by the hand at the sheep-boxes in the fields. Partridges also caught by the hand, and Water-hens the same.

List of Plants killed and injured at Blackadder. By MR REID.

<i>Abies Douglassi</i> ; much damaged.	<i>Deutzia crenata</i> , flore-pleno; much damaged.
„ <i>Menziesi</i> ; killed.	<i>Garrya elliptica</i> ; killed.
<i>Araucaria imbricata</i> ; killed.	Ivy in vars; killed.
<i>Biota aurea</i> ; damaged.	<i>Ilex</i> . Holly in var; all killed.
<i>Cedrus Atlantica</i> ; killed.	Jasmines in vars; all killed.
„ <i>Deodora</i> ; killed.	<i>Laurus nobilis</i> ; killed to ground.
„ <i>Libani</i> ; killed.	<i>Ligustrum</i> (Privet); all killed to ground.
<i>Cryptomeria Japonica</i> ; killed.	<i>Lonicerain</i> vars.; very much damaged
„ <i>elegans</i> ; damaged.	<i>Mahonia Japonica</i> ; killed.
<i>Cupressus Lawsoniana</i> ; much damaged	Siberian Crab (<i>Pyrus baccata</i>); much damaged.
„ <i>erecta</i> , <i>viridis</i> ; „	English Oak (<i>Quercus Robur</i>); very much damaged.
Red Cedar (<i>Juniperus Virginiana</i>); killed.	Turkey Oak (<i>Quercus Cerris</i>); very much damaged.
<i>Picea lasiocarpa</i> ; browned.	Evergreen Oak (<i>Quercus Ilex</i>); killed.
„ <i>nobilis</i> ; browned.	Ribes vars.; killed to ground.
„ <i>Nordmanniana</i> ; browned.	<i>Skimmia Japonica</i> ; killed.
„ <i>Pinsapo</i> ; killed.	<i>Spiræa</i> in vars.; much damaged.
<i>Pinus excelsa</i> ; killed.	Periwinkle (<i>Vinca</i>); much damaged.
<i>Retinospora</i> in vars.; damaged.	<i>Weigelia rosea</i> ; much damaged.
<i>Wellingtonia gigantea</i> ; killed.	<i>Azalea Pontica</i> ; much damaged.
<i>Taxus baccata</i> (English Yew); killed to ground.	<i>Rhododendrons</i> ; killed to ground.
<i>Taxus fastigiata</i> (Irish Yew); killed.	Roses; killed to ground.
<i>Thuja lobata</i> ; damaged.	Laurel, Portugal (<i>Cerasus Lusitanica</i>); killed to ground.
<i>Thujopsis dolabrata</i> ; damaged.	Laurel, Common (<i>Cerasus Lauro-cerasus</i>); killed to ground.
<i>Thuja Lobi</i> ; damaged.	Apples; many killed; all damaged.
<i>Ampelopsis</i> in var.; killed to ground.	Pears; many killed; all damaged.
<i>Aristolochia Siphio</i> ; much damaged.	Peaches; all killed.
<i>Aucuba Japonica</i> ; killed to ground.	Plums; many killed; all damaged.
<i>Berberis Darwini</i> ; „	Cherries; a few killed; all damaged.
<i>Buxus</i> , Box tree; killed.	Nectarines; all killed.
<i>Clematis</i> , in vars.; killed.	
<i>Cratægus oxyacantha</i> (Hawthorn); much damaged.	
<i>Cratægus Pyracantha</i> (evergreen); killed.	
<i>Laburnum</i> in var.; killed.	

Ayton Castle Gardens. By MR WILLIAM ROBERTSON.

We have suffered most dreadfully here from the effects of last winter. All the Bay and Portugal Laurels have been killed to the ground, and a good many killed outright. Laurestinuses were utterly killed. Yews have suffered very much; a good many of them killed. Hollies from 20 to 35 and 40 feet high, were cut to the ground, and some fine Holly hedges shared the same fate. Wellingtonias were very much scorched, and *Araucaria imbricata* was killed outright. In Peach trees, on a south wall, the wood was killed back to the two-years-old wood. Apricot buds were completely

destroyed. Ivy on walls was all cut to the ground. In Walnuts the young wood killed back to two-years-old wood. A few of the finest Hybrid Rhododendrons were utterly killed. The Standard Roses are all dead.

Subjoined is a list of the temperatures for December, 1879, and January, 1880:—

1879—Dec. 1—	4° of frost and fall of snow.	1879—Dec. 13—	2° of frost.
„ 2—	12° of frost and 12in. of snow.	„ 16—	2 „
„ 3—	21 freezing all day, most severe.	„ 18—	2 „
„ 4—	31 do. do.	„ 19—	5 „
„ 5—	24 of frost.	„ 21—	6 „
„ 6—	9 „ more snow.	„ 25—	2 „
„ 7—	12 „	„ 26—	5 „
„ 8—	14 „	„ 27—	3 „
„ 9—	9 „	1880—Jan. 12—	4 „
„ 10—	5 „	„ 13—	5 „
„ 11—	15 „	„ 19—	9 „
„ 12—	11 „	„ 20—	10 „
		„ 26—	10 „
		„ 27—	8 „

[Some of the killed Araucarias were fine trees. In the Pinetum here there are some grand old examples of *Pinus Austriaca*; *Wellingtonia gigantea* rises 30 feet high; *Picea Nordmanniana*, 40 feet; and *P. nobilis*, 60 feet].

Kimmerghame. By ARCHIBALD CAMPBELL SWINTON, Esq.
Effects of last Winter's Frost.

The Laurels, both Portugals and Bays, were killed to the ground, and it has been necessary to cut them all over without a single exception. Even the Rhododendrons (generally very hardy) have partially suffered. Nearly all the Hollies were killed. Yews did not look so bad at first, but as spring advanced, they withered more and more, and a considerable portion of them will require to be cut to the ground. Of *Coniferae* very few have sustained any injury except Wellingtonias and Deodaras. The latter are in great measure destroyed. Of the former nearly all the lower branches are killed, which will greatly affect their shapely appearance. Of forest trees, the Oaks alone seem to have suffered. Many old Oaks have thrown out very scanty foliage, and in most of these instances the leaves that have been produced are of enormous size—sometimes as much as a foot in length. With vigorous pruning, and cutting off the dead branches, most of these Oaks may, it is hoped, be allowed a chance of recovering next year. Neither Thorns nor Laburnums blossomed last spring; and there was literally no fruit of any kind—numbers of Apple trees especially being killed. Whins and Wild Roses (especially the former) are also killed.

Mr DAVID JACK, the gardener at Kimmerghame, supplies a few additional remarks. “During the frost of December, 1879, I had two thermometers outside; one hung on a wall 4 feet above ground facing the north, but well

sheltered by trees and side walls; the other 2 feet above ground, facing the north, with no shelter; a spot always very frosty. Both glasses went down 8° below zero. In the garden the fruit buds of the Peach, Apricot, Pears, Apples, and Sweet Cherries were killed. The trunks of the Apples were rent in all directions; the rents were from 6 to 18 inches long, and about ¼ inch wide. I have taken out as useless above a dozen of them."

Milne Graden and Paxton House.

Mr MILNE-HOME mentions in a note from Milne Graden, dated Dec. 14th, 1880:—"All the Laurels were destroyed here, and at Paxton last winter. Some large Holly trees at Paxton were killed. Here half of the large Yew bushes lost their stems, whilst the lower branches near the ground were unscathed."

Notes on the Weather and its Effects on Vegetation, during the past Winter at The Hirsel, Coldstream. By Mr JOHN CAIRNS.

The lowest temperature registered here last winter was on the morning of the 4th December, the thermometer being 6° below zero. We cannot vouch for the accuracy of our instrument, but judging from effects and the readings at other places, we may safely assume that we were not far wrong. The storm was sudden, short, and severe, "being in marked contrast to the winter before, when we had a whole season of cold, which, because of its long duration, followed as it was by the most sunless summer on record, ill prepared trees and shrubs for the trying ordeal that they had to pass through." Had we had a fine summer, and as the result, well-ripened wood, the consequences would not have been so disastrous as they proved to be.

Shrubs and plants suffered here very severely, more so than they were ever known to have done. Fortunately for us, along with the frost we had a covering of almost a foot of snow, which made all dwarf things snug and beyond harm, as evidenced by the escape of our Dwarf Roses; while Standards were entirely destroyed, and Teas and other tender sorts, though having the protection of a wall, were cut to the ground. Clematises and other like climbing plants suffered much; though, of course, not injured permanently, as they have come away nicely from the root. Portugal Laurels which passed through the previous winter unscathed, were quite blackened, and hence had to be cut down to the ground. They are now breaking away again. The Bay Laurel which was cut down so much the winter before, did not suffer correspondingly with other shrubs; but the young shoots which had come away during the summer were of course killed, being soft and immature. The hardier sorts of Rhododendrons were not in the least injured, but some of the finer hybrids were destroyed. We have a good many large Hollies here, which have not been hurt with frost for many years, if at all; but, unfortunately, some have been killed, and others quite crippled, shewing no growth till well on in summer, and even then of a weak and flickering nature; but as in seeming contradiction, side by side of the killed and maimed you have Hollies in the most robust health. There is another curious fact,

requiring explanation, viz., that those Hollies that have suffered most, in fact, some of them killed outright, were those that were heavily laden with berries, these remaining hanging on the dead branches till well on in summer. Had the effort in bearing such a crop of fruit, it may be asked, enfeebled the constitution of the tree for the time being, and hence made it more susceptible to injury from the extreme cold? *Aucuba Japonica* where not covered with snow, was much hurt. The Oaks which suffered so much farther up the Tweed, and more especially on the Teviot, were not hurt here. The foliage was healthy and early. Enquiries have been made by correspondents in the public prints as to the absence of Hawthorn blossoms this season. In the grounds here the "May" in ordinary seasons is unusually fine, and in great quantity; but this season there has been almost none. There can be no doubt such is owing to the ungenial summer last year. The same bears on the failure of the large-fruit crop. There were certainly blossoms of a kind, but of that weak, unhealthy sort, that did not properly set;—in fact, if we have not sun we cannot expect either flower or fruit.

Minimum Temperature at The Hirsell Gardens, Coldstream.

1879.—Dec. 1—Thermometer at 25°.

„ 2—	„	„ 3
„ 3—	„	„ 3
„ 4—	„	„ 0·6 below zero.
„ 5—	„	„ 0·
„ 6—	„	„ 7
„ 7—	„	„ 8
„ 8—	„	„ 10
„ 9—	„	„ 10
„ 10—	„	„ 24
„ 11—	„	„ 9
„ 12—	„	„ 19
„ 13—	„	„ 19
„ 14—	„	„ 34
„ 15—	„	„ 38
„ 16—	„	„ 27

August 21, 1880.

Mertoun House Gardens. By Mr WILLIAM FOWLER.

MERTOUN HOUSE being so near the river Tweed, and consequently more liable to hoar frost than some places of greater elevation, although only a few miles distant, but more open and with a freer circulation of air, has undergone an immense devastation, while in comparison they have suffered comparatively little. In the winter of 1860 and 1861, I think, Bay and Portugal Laurels suffered severely, but never during my experience of 35 years have I witnessed such havoc on trees and shrubs in general, as in the past two winters. The last one, 1879-80, partly from the effects of the previous severe one of 1878-79, was much more disastrous in its effects. Much of this is, no

doubt, due to the cold wet summer of 78 and 79, when the temperature of the earth never rose sufficiently to induce healthy growth, even in our native fruits. Some of our varieties of Apple trees, although previously healthy, during the cold rains went on dying piecemeal, and what growth there was made, was too late in the autumn to get at all ripened; the wood being quite green and soft, altogether unfit to withstand the sudden and severe transition from a growing temperature to that of 12° below zero, as was the case in this district in December last. It is to this that I attribute such havoc during the past two winters in our gardens and shrubberies, as in a sunnier clime we have seen many of the trees and plants that have been killed or injured during the past two years, withstand more than 20° below zero with impunity; thus illustrating the great necessity in this climate of planting on dry bottoms, with a free circulation of air around the plants to facilitate the early ripening of their growths.

As hinted above, many of our best varieties of Apple trees died altogether; others were very much injured; and all more or less. Pears, even on the walls, had many of their fruit spurs killed to the main branches, and consequently bore no fruit. Owing, however, to the fine warm summer, they have made good growth, and with another good year, their former healthy condition may be established. Peaches are so badly cut up, that scarcely any of the trees are worth keeping, and most of them have been thrown out. They used to be healthy and bear abundant crops. Apricots are not so bad, although much injured.

But the chief disaster was in the shrubberies. All the Bay and Portugal Laurels had to be cut to the ground. English Yews, which I never knew to be injured before, and of large size, were killed to the ground; also Hollies of great age. Hedges of tree Box were very much injured or killed. Of Deodars some were killed, others much injured; and the same remark applies to Araucarias. Of English Walnuts the branches were killed. Roses of all kinds were killed to the snow-line; even climbers on walls, such as Gloire de Dijon of large size and thickness; and the same thing happened to Clematises. The Oak trees were injured, but I believe more from the effects of cold wet summers than frost. The devastation has been most severe in glens and large thick clumps; in fact wherever there was least circulation of air the destruction was greatest.

Note of the Effects of the Frost of December, 1879, on Vegetation at Thirlestane Castle, Lauder. By MR JAMES WHITTON.

The intense frost of last December has been the most destructive to vegetation in this district within the memory of any one living here. Although it was not more severe nor so long continued as that of December, 1860, it has done far more damage to plants, which is no doubt to be accounted for by the extremely unfavourable summer of 1879, leaving the wood so very imperfectly ripened.

As showing the very unfavourable nature of the summer of 1879, I may mention that neither Kidney Beans nor Vegetable Marrows produced a single

fruit here, although growing in our most favourable borders, and the latter grown under hand-glasses.

Lowest Readings of Registering Thermometers in Box, 4 feet above ground, Black Bulb on grass:—

1879.—Dec. 3	—4°	—7°
„ 4	—8°	—11°
„ 5	—1°	—5°

The following plants were all killed to the ground, or very nearly so:—Common and Portugal Laurels, Roses of sorts in whatever position grown, Clematises, Hollies (both green and variegated), *Cedrus Deodora*, *Libocedrus decurrens*, *Acer Negundo* var., *Cotoneaster Microphylla*, and *C. Simmonsi*, *Pernettya mucronata*, *Menziesia polifolia*, *Osmanthus* (silver), and *Escallonia macrantha*.

Many of the following have suffered severely; a good few of some sorts killed:—Rhododendrons, Common and Irish Yews, Tree Box, Privets in hedges and otherwise, Wellingtonia, Laburnums, Spireas, Guelder Rose, Barberries, Common Lilacs, &c., &c.

Fruit trees also suffered very much, not only were the young wood and fruit buds of a great many of them quite destroyed, but several of the Standard Apple trees quite killed, so that our fruit crop this year is all but a total failure, except some of the small fruits, and I am afraid we have not seen the last of it, as many of the wall trees, especially Pears, have shed their leaves, and are throwing out fresh growths.

Snow fell on December 2nd, to the depth of 7 inches, which with calm weather, helped to save our vegetables. Autumn planted Cabbage, German Greens, and Leeks, were little the worse, about one-half of Brussels Sprouts and Savoy killed, while of the several varieties of Broccoli grown, “Knight’s Protecting” was the only one that survived.

I ought to have mentioned that though our place is 558 feet above the level of the sea, it lies in a sheltered hollow within 300 yards of the river Leader, and about 20 feet above its bed. There are also two tributaries of the Leader, one on each side of us, and within 300 yards, so that we are very much subjected to hoar frosts.

The Gardens, Thirlestane Castle, Lauder, 21st August, 1880.

List of Trees and Shrubs killed and injured in Berwickshire, in 1878 and 1879-80. By Mr PETER LONEY, Marchmont.

The observations that I have to offer on the effects of the severe frost of 4th December, 1879, on trees and shrubs, apply chiefly to the Valley of the Tweed; where in several well authenticated instances the minimum Thermometer registered 12 or 44 degrees of frost. This low temperature occurring so early in the season and after so cold and sunless a summer as 1879, operated the more fatally from trees and shrubs being then full of sap. In general, the Oaks were in full leaf, and ill prepared for such an attack; consequently, many fine old trees were killed, while most lost the growths of the five previous years. There were instances also of the bark of trunks and branches

being split from top to bottom, which indicated that the growth had not been completed. The unfavourable summer conditions for healthy development of perfectly ripened wood, will be better understood by quoting the rainfall and sunshine in hours, for the two years preceding 1879 :—

Year 1877,—Rainfall, 46.06 ; Sunshine, 1572 hours.

„ 1878.— Do. 35.46 ; Do. 1760 „

„ 1879.— Do. 33.92 ; Do. 1375 „

The great amount of rain in 1877 affected the growth of 1878 ; which in turn retarded the rising of the sap in 1879. Again, in August, 1877, the rainfall amounted to 7.98 inches ; August, 1878, 5.64 inches ; while in June and July, 1879, the rainfall was 5.32 and 6.40 inches respectively, or, about $11\frac{3}{4}$ inches ; and the sunshine in hours only amounted to 244 for these months, or 2 hours less than we had in July, 1878. The following is a list of trees and shrubs killed and injured, principally at elevations under 300 feet above the level of the sea ; above that the destruction was not so great :—

Laburnum.
Oaks (Common and Turkey).
Yew (Common and Irish).
Mountain Ash.
Chestnut (Spanish).
Abies Menziesi.
Araucaria imbricata.
Cedrus Atlantica.
„ Deodora.
„ Libani.
Cupressus Lawsoniana.
„ viridis.
Picea Pinsapo.
Thuja Lobbi.
Wellingtonia gigantea.
Thorns, of sorts.
Apricots on walls.
Peaches do.
Nectarines do.
Roses, especially Standards.
Berberis vulgaris.

Box Tree, of sorts.
Cotoneaster.
Holly (Common).
Laurel (Common).
„ Portugal.
Privet, of sorts.
Rhododendron Ponticum.
Arbervitæ.
Aucuba Japonica.
Garrya elliptica.
Laurustinus.
Pyracanthus.
Pyrus Japonica.
Philadelphus grandiflorus.
Ribes sanguineum var. album.
Sweet Bay.
Aristolochia siphon.
Escallonia macrantha.
Lonicera, of sorts.
Hedera, of sorts.
Jasminum, of sorts.

A great proportion of the above were killed ; and others cut down to the snow line, the snow being fortunately about nine inches deep. Laurels in most instances have come away from the root.

January, 1881.

EAST LoTHIAN.

North Berwick. By Mr THOMAS LEES.

I beg to give the following answers to your questions :—As regards the effects of the last two severe winters on trees, shrubs, and garden products, I cannot find that the severe frost or cold has in any way effected trees. Many of the sprouts succumbed to the severity and sudden frost of

last December, 1879; such as Aucubas, Euonymuses, Tamarisks, and Roses; its effects being more striking in the case of half-hardy shrubs than the ordinary kinds. I think here, and around this district, that garden products generally suffered less this last winter, than during the former one. That may partly be accounted for from the fact of our situation being close upon, and open to the sea, and therefore exposed to the east winds; which, this last spring, were not so continued as they were in the former spring of 1879. Regarding our height, North Berwick rises from 6 to 50 feet above the sea-level; such situations as Archerfield and Leuchie rising respectively from 75 to 180 feet. The lowest temperature here was one night in the winter of 1878, when the thermometer fell to 15° ; and last winter it fell to 13° ; so that we had 17 degrees of frost in 1878, and 19 degrees of frost in 1879.

North Berwick, Sept. 10th, 1880.

Leuchie Gardens, North Berwick. By Mr W. M. ALEXANDER.

In giving a few notes on the effects of the last two winters, on the vegetation at this place, I will state first that Leuchie is situated about two-and-a-half miles from the sea, and has the German Ocean to the north and east, and the Firth of Forth to the west, and is placed on a slight eminence, which would fully expose it to the bitter east winds which prevail here in spring, except for the closely wooded plantations which entirely surround the house and grounds. The lawn is well closed in with tall trees of Beech, Elm, Ash, Spruce, Fir, &c, with a thick undergrowth of Laurels, so that the more tender shrubs and trees—in the margin and on the grass—are not exposed to the full influence of the cold.

Some of the more tender shrubs have been crippled and killed. Laurestinuses, as single specimens on the grass, are mostly killed to the ground. Sweet Bays growing up amongst the other shrubs on the edge of the grass are killed; generally one or two having just escaped, but very much crippled. Arbutuses are looking well and healthy, where they have been exposed to the sun and plenty of air; but where they were shaded by taller trees they were killed entirely last winter—they escaped the winter before. A large bed of Roses, well exposed to the west winds but sheltered in every other quarter, has escaped with few or none of the plants going off. These Roses are making better growths this summer than they have done for a year or two. Pampas grass killed in different parts of the country, has escaped here. Aucubas escaped the winter of 1878-79, but were very much browned and crippled in that of 1879-80.

In the flower garden, which is here surrounded by high walls, many Laurestinuses were killed last winter. They were very little the worse the winter before. The same remark applies to Euonymuses on the wall, looking east, but in both cases they are growing away from the ground again. A very old plant of *Aloysia citriodora* growing on the wall looking west was quite killed in the winter of 1878 and 79. On the same wall growing beside it are four old plants of Myrtle; one having been there about fifteen years, I believe. They had no covering whatever in the winter before last, and were

very little the worse, growing luxuriantly and flowering beautifully last summer. Last winter we covered them with Laurel branches, tying them closely over them. This summer they are growing a little and flowering very well, but look a little rusty. Tea Roses on the same wall are very much crippled; all old wood being killed last winter, only young shoots were left. Several Standards were also killed, but there were no deaths among the dwarfs.

In the herbaceous borders, Stocks, Wallflowers, and Pentstemons, were among the killed of the winter of 1878-79. Last winter all of these escaped. No doubt the snow lying so long on them was the cause of their death during the first of the winters.

Vegetables in kitchen garden also suffered more the first winter than the last one.

The soil here, except in some parts of the garden, is a very stiff, wet, adhesive clay; the shrubs in all cases, and also several kinds of Coniferæ, grown in that kind of soil, thrive very well in it.

The lowest temperatures for 1878-79, after February, and for that month, 19 degrees of frost, Fahrenheit, on the 18th and 20th. On the 14th of March, 12 degrees. In April we had three nights in succession, 17th, 18th, 19th, at 2 degrees; and on the 3rd of May, we had 2 degrees.

For the winter of 1879-80 we had in December 30 and 28 degrees two nights in succession, on the 3rd and 4th. In January the thermometer only got down to freezing on the 28th February; on the 9th, we had 7 degrees; only getting down to freezing two other nights, 13th and 27th. March 9th, we had 3 degrees; 18th, we had 5 degrees; and on 19th, we had 7 degrees. April, on the 23rd, we had 4 degrees.

We had no deaths among fruit trees. Peaches and Apricots are growing very luxuriantly this summer. There is no Peach crop out of doors—but a fair crop of Apricots. Apples and Pears are a very poor crop both last year and this. Small fruits were very plentiful both years.

Yester Gardens. By MR ALEXANDER SHEARER.

With our high and cold climate here, we have never planted many of the more tender trees. We stand 425 feet above the level of the sea. The winter of 1878 did not do us any harm in regard to any of the trees; and even the last winter was not so bad, as at some other places. Certainly the Laurestinus was killed to the ground, as well as *Aucuba Japonica*. The *Garrya elliptica* stood well enough, and none of the Pinuses were touched. Roses did not grow much all the summer, and though killed to the ground, they have all grown stronger this year. I cannot say that we lost one by the frost. A Gloire de Dijon on an east wall without any protection, was not the least injured. *Fuchsia Riccartoni* stood out uninjured, with a slight covering of straw-litter on the bushes. On the other hand, Globe Artichokes were nearly all killed. Those left are only giving fruit at this date, instead of in the end of August, and in September. I did not cut over a dozen of Broccoli and Cauliflower during the winter of 1879 and spring of 1880, out of 800

planted at the usual time. Peas again were a month later than usual. I attribute nearly all these effects to the cold, wet and sunless summer of 1879, and very little to the cold of the winter.

At Sir Robert Stevenson's, Stevenson House, below Haddington, and close to the banks of the river Tyne, all the Laurels were killed, and large Hollies from 20 to 30 feet high were killed to the ground; while our Laurels were not touched. Our lowest temperature was 2 degrees above zero. It was lower at Haddington.

Stevenson Gardens. By Mr ALLAN McLEAN.

The damage here from frost has been very great. We are within 200 yards of the river Tyne, and the air is always very damp. All the Laurels have been cut down; most of the Hollies also, and the remainder of them are very sickly. Twenty-four of our Apple trees were quite killed, and a great many of the Gooseberry bushes. The Pears on the walls suffered terribly, and also our Peaches.

As regards forest trees, young Oaks and Larches suffered very much, and will never make handsome specimens. One Oak, bordering the carriage-drive, 50 feet high, has only a few leaves on it, and will require to be cut down. Others of the Oaks are split up in the centre, but seem to be healthy. *Pinus excelsa*, *Araucaria imbricata*, and some young Wellingtonias are killed. We have a number of very old Walnut trees, which have perished.

All the Privet on the estate is quite destroyed, and there is not one green blade of Whins or Broom left.

6th November, 1880.

Report of the effects of the Winter of 1879-80 at Tynninghame House.

By Mr R. P. BROTHERSTON.

BEFORE giving notes on the damage received by vegetation from the winter of 1879-80, it will be well to draw attention to this fact, that many of the shrubs, &c., which finally succumbed to the late severe frost, really received the first blow from the extremely cold wind in the late spring of 1877. Hedge-rows in fresh leaf and exposed to the full force of that wind were left as if a flame of fire had swept over them. A large specimen of *Garrya elliptica* standing in one of the shrubberies is only now recovering from the damage it received, whilst other things, as *Arbutus Unedo*, have not only not recovered, but were damaged, in some instances, so much that they were either killed outright during the past winter or are now dying. The destructive force of cold winds is not sufficiently estimated. Only lately I had my attention called to some shrubs exposed to the gale which destroyed the Tay Bridge last December. The sides of these to the west were completely destroyed, nothing remaining but bare branches and twigs. The wall devoted to apricots in the garden is exposed to strong winds from the east; and it is only when the wind changes from that quarter that the trees commence to make their summer growth; one consequence of the trees being kept in a state of semi-stagnation up to the end of June showing itself, in all trees young and old,

developing to an extraordinary degree the puzzling disease which results in the death of large branches, and sometimes the whole tree, throughout the summer. This however, by the way. Only it is well when estimating the damage occasioned by last winter's frost that this fact should not be lost sight of.

Perhaps the greatest individual damage effected by the severity of the past two or three years has been borne by a fine old Walnut tree, standing in the green in front of the gardener's cottage here. This particular tree had a large limb removed some years back, and to this Lord Haddington attributes the primary cause of its decay. The Psoci which are so destructive to the foliage of some fruit trees, have also had a share in the mischief. Last summer these insects destroyed to a leaf the whole foliage of this tree, and the fine autumn induced the growth of young shoots, which were caught by the frost of December. This year the tree stands with all the smaller branches and twigs dead, and young growths pushing from the main trunk and large branches. The large Strawberry trees which stood in various positions in the shrubbery and on the lawns near the house have, with the exception of one specimen, been irretrievably damaged. Several have been cut down to the ground, and the remainder look as if it were a mere question of time for them to follow. The south-east wind which has been already alluded to as being so destructive to the *Garrya elliptica*, was not seconded by the frost in the case of this shrub, so that this fine decorative shrub may be considered frost-proof in this locality. Two large specimens of Sweet Bay were killed to the ground, others killed at the points of the shoots, and some not at all damaged. In all cases these are making strong young growths again. Laurestinuses were served in the same manner; in some positions some were killed to the ground, some considerably cut up, and others had only the foliage destroyed. Some that were not cut over in spring have since given way under the force of the sun. A fine Laurestinus hedge, 10 feet high by 8 feet in breadth, was cut in to 8 feet in height by 5 feet through; up to the present date it is making a very satisfactory young growth. It is, however, not to be depended on, as the bark of many of the main stems is split at the base. All *Leycesteria formosa* was killed to ground. *Benthamia fragifera* and *Escallonia macrantha* in open shrubberies, were killed slightly back; *Aucuba Japonica* was more or less damaged. *Ceanothus* was the only shrub on walls killed back. Myrtles, however, were somewhat damaged. At Smeaton, where the lowest winter temperature was only 5°, Myrtles and Escallonias are killed on walls. Commoner shrubs, as Laurels, were only damaged, in so far as the watery growths of 1879 were killed. All Roses, with the exception of Moss Roses in the open border, and Gloire de Dijon on walls, were cut back; *Fuchsia Riccartoni* the same. Tritomas, *Salvia patens*, *Gynierium argenteum*, *Agapanthus umbellatus*, were all killed down, but are making strong growths again. A New Zealand Flax (*Phormium tenax*) is probably killed outright. Two or three old Apple trees (not in good health previously) were killed; many others damaged. Fig tree was killed at point of shoots, but again bearing this autumn. All kinds of vegetables, with the exception of young Cabbages, young Cauliflowers, Parsley, Spinach, young Lettuces, Brussels Sprouts, and Celery, were killed.

The lowest temperatures here, in winter 1879-80, were on December 4th, when the glass 3 feet from the ground gave $0^{\circ}35$, the next night was $0^{\circ}1$. The evening of December 3rd gave no appearance of an extra hard frost, and the following morning, between six and seven o'clock, when I had occasion to grasp a piece of iron I was surprised to find it stick to my hand and still more so when the thermometer was consulted, and a degree below zero indicated. By daylight $3\frac{1}{2}^{\circ}$ below zero was reached when the cold became less intense.

With regard to the warmest day of the present season; on Thursday, August 11th the thermometer in the shade registered 80° , and is up to present date the warmest day of the present year, or of several years back. In gardens, the present year is remarkable for the small crops, and in some cases no crops of fruit; even the commoner fruits, as strawberries, gooseberries, &c., being below the average very much. There is, however, every prospect of next year's crop being an abundant one, trees of all kinds making an abundant and firm growth, only requiring a warm autumn to all but ensure that the season of 1881 will be as remarkable for the abundance of its fruit crops as that of 1880 is for its scarcity. Such quick growing and short lived subjects as flowers and vegetables are generally very fine this season.

Tynninghame, August 17th, 1880.

NORTHUMBERLAND.

Bankhill, Berwick-upon-Tweed. By Mr JOHN SCOTT.

Owing to the wet and cold summer of 1879, the trees on the Bankill never fairly leaved, and there was no new growth in them. They had all the summer the appearance of being in a weak state of health; and when the hard cold winter of 1879-80 set in the frost nipped them, and death was the result. I should say this result was not so much owing to the hardness of the frost, as to the want of vitality in the plant from previous inclement and unsuitable weather. The trees came under my observation nearly every day of the year. The authorities have now removed the dead trees and planted Planes in their place. The dead trees were Lombardy Poplars.

Dec. 31, 1881.

Tweed Villa, Norham. By Miss DICKINSON.

Privet hedges killed to the ground. Aucubas and Portugal Laurels all killed to the ground. 1 Fir killed, the others all more or less injured. Hollies very much blighted. Lavenders killed. 1 Plum and 1 Apple tree killed; all the others much injured; and only 1 or 2 of them have blossomed this year. Poplars killed. The Laburnums never flowered, and very few of the Lilacs. Almost every Rose killed to the ground; also Jasmines, both yellow and white. Gooseberry bushes much blighted. All Gladioli which escaped the preceding winter were killed. The Laurels and Laurestines were all killed down to the ground the winter before; and all the young shoots of last summer were destroyed.

The garden of the next house, Rosebank Villa, has suffered much the same, except that there is a Yew nearly, if not quite, killed.

Ford Castle Gardens. By MR HENRY TROTTER.

The glass fell to 11° below zero on the night of the 3rd and 4th of December, 1879; the glass was about three feet above the snow. The frost killed some of our Peach trees, and injured others very much; also all our Laurels, both Portugal and Common, were killed down again. All plants of *Aucuba Japonica* were cut down. Many large bushes of Common Yew were cut down, and others very much injured. Irish Yews were also injured. Wellingtonias suffered considerably. Of large plants of *Thuja gigantea*, about one half are killed and disfigured; while others standing by their side were not touched. Not one of our Cypresses was touched. *Cedrus Deodora* was cut down, also small plants of *Araucaria imbricata*. Cotoneasters were all killed. *Garrya elliptica* was killed down. Evergreen Oaks and Sweet Bays were cut down; and a great deal of different kinds of Ivy on the walls was killed, while other kinds are springing from the wall again. Quantities of Common Privet were killed. Of herbaceous plants we lost few. Of *Tritoma Uvaria* we lost many large plants. Roses suffered most; of Standards we have none left; Dwarfs also suffered very much.

At Etal all Peach trees were killed.

August 23rd, 1880.

Coupland Castle. By MATTHEW T. CULLEY, Esq.

August 20, 1880.—As I told you before, the severe winter of 1878-9 destroyed very many of my Laurels and Hollies; all tender shrubs of course perishing, and Oaks suffered severely in their young shoots. The winter of 1879-80 was comparatively mild, but had one night—that of December 31d—of intense frost. Not having a registering thermometer, I cannot tell the exact degree of intensity here, but it was sufficient to kill all the Hollies and Laurels (except two or three Hollies) that had been spared from the winter before, and to cut down to the ground the young shoots springing from the cut shrubs, and very luxuriantly they had sprung during the wet summer of 1879. The Oaks again suffered frightfully; many young, and I fear more than one old one are killed; the young wood which was taking the place of that destroyed the winter before was cut off, as well as the growth of at least one year previous. Very few leaves appear on the Oaks here this year, though what there are appear to be of large size. Several small Yews, too, are seriously injured, and the Box-trees, of which there are many, nearly all turned brown that same night. These, however, I did not cut down, and I am happy to say that many of them show signs of recovering. Our Roses were all cut to the ground, though they have shot wonderfully this year. The Calceolarias (under covert, of course,) were destroyed.

Jan. 8th, 1881.—Here, as at Fowberry, the leaves on the blighted Oaks are of huge size, though how to account for this I do not know. We have them here quite equal in extent to the largest at Fowberry, which is 14 inches by 7. Ours is certainly the largest I ever saw, 16 inches by 7; it is a most curious looking thing. The next in size is 11 inches by 6.

A vast quantity of my Oaks have had to be cut down; they were chiefly

small ones; the larger will, I trust, recover, and I am in great hopes that many of the Boxwood trees will revive; at first they looked hopeless, but I did not cut them and they improved wonderfully during the summer.

Some Notes on Effects of Winter of 1879, at Fowberry Tower, on the river Till. By GEORGE CULLEY, Esq.

At 5 A.M. on the 4th of December, a thermometer, 18 inches from the ground, in the garden shewed 16° below zero (Fahrenheit). At 9 A.M. a thermometer, 20 feet from the ground, marked 7° below zero, and never rose during the day above 4° above zero; the same thermometer marked 28° above zero at 9 A.M. on the 5th, *i.e.*, showed a rise of 35° in 24 hours.

The extreme cold lasted little over 24 hours, but its effect on trees and shrubs was very great. It killed, amongst deciduous trees, several Standard Apples, several Apricots against south wall, the only two Standard Damsons, all the Laburnums, three or four Peaches against south wall, two or three Plums, and grievously damaged all the Oaks. Some Oaks had no leaves above stems during the summer of 1880, while others put out tufts of immense leaves on the branches where 4 or 5 years' growth had dropped off. The longest Oak leaf gathered measures 14 inches by 8; the most grotesque is 8 inches in what ought to be its length, by 10 wide; many leaves vary from 11 and 12 inches long to 7 and 9 wide. Many Oak trees are split.

Amongst Conifers scarcely any tree altogether escaped, except *Abies Canadensis*, *Albertiana*, *Douglasi*, *Menziesi*, *Cupressus Nootkaensis*, *Lobbi*.

All Piceas suffered slightly, including the common Silver Fir.

Most of the true Pines are unhurt.

All English Yews (some a hundred years old) are killed, or nearly so.

Nearly all old Box-bushes killed.

All Wellingtonias are killed.

Many fine specimens of *Cupressus Lawsoniana* are killed; all damaged.

All sorts of Ivy killed to ground. Many Privet hedges killed out.

The only large Holly which survived 1860 and 1878, was killed to snow mark.

Many Rhododendrons were killed to ground.

Feb. 2nd, 1881,

Chillingham Castle Gardens. By Mr ROBERT BOWIE.

Report of some of the Effects of last Winter's Frost on Trees and Shrubs here:—

Oak, I have not noticed any that are quite dead, but many are nearly so.

Walnuts, age not known, but must be from appearance not less than 200 years, all but dead.

Yews, Common, many are killed, others are still dying; they invariably begin doing so at the top. Some are of large size, having been transplanted to where they now are, more than 50 years ago. At that time they were trees of great age.

Cedar of Lebanon, many quite dead, others still sickly.

Of the Deodar Cedar, as yet none are dead, but going fast.

Wellingtonia gigantea, some that were planted 18 years ago, are nearly dead, others have lost branches from the ground to nearly half their height; in low situations, on strong clayey-loam, they are worst; on soil of a lighter nature, and only a few feet higher, they are in the best of health.

Hollies, in low situations, are nearly all killed to the ground, those in the higher and more exposed parts of the park are but little hurt. Laurel, Portugal, killed to the ground.

Laurel, Bay, dead to the ground, many are now sprouting.

Wistaria Sinensis, one plant which must be amongst the oldest in this country, was nearly killed to the ground. It covered some 1350 feet of wall. Box tree, many are quite dead. *Araucaria*, several are quite dead.

Roses, Standards, all but 2 or 3 are dead, although protected with fern and straw.

Apple, Standards, of large size, planted nearly 50 years, are now all but dead; some sorts have sustained more damage than others, but none are now producing fruit.

Apricots, on south walls, some are dead, others sickly; several young trees are healthy, having been protected with mats previous to the frost being so severe.

Peaches, not many grown outside; what are were protected in a way similar to Apricots, and are now very healthy.

Chillingham Gardens, July 22nd, 1880.

Mr Bowie in his accompanying letter says: "The sad havoc amongst our trees and shrubs is to me a matter of great regret, having planted the greater part of them, and having been in the habit of looking on them as very near relations, for a number of years. Despite of the loss we have sustained, Chillingham is still very beautiful—nothing that I know of as a park surpassing 'The Home of the Wild Cattle.' I am uncertain as to the lowest temperature we had last winter; that which I noticed was 9° below zero, but our thermometer having been exposed for some years, I fancy that it might not be quite correct; the more so, as some of our neighbours, at only a mile and a half from us, had as much as 7° more, but even the lowest we had would not have done the damage it has, had we been blessed with a more propitious summer. I am very glad to tell you that almost none of our healthy young specimens of *Coniferæ* are at all injured, which is one thing to be very thankful for."

Reporting to the *Gardeners' Chronicle*, in August, Mr Bowie says of the fruit crop:—"Since the formation of the garden, in which fruit is growing (upwards of fifty years ago), there has not been such a scanty crop (small fruits excepted) grown outside against walls, and as Standards; I might almost with truth say of many sorts we have none, all are most unhealthy, and of some sorts many trees are dead."

Lilburn Tower. By MR JOHN DEAS.

Since I saw you we have passed through two most memorable and severe winters, and certainly they have left their mark, or rather traces of where things once stood. We have suffered severe enough here, but not even so bad as some of our neighbours immediately around us, such as Chatton, Fowberry, &c., &c., where it is said there is nothing left. However, I consider we are bad enough, every one of our Common and Portugal Laurels is killed; fine large Yew bushes which had stood "the battle and breeze" for long years had to succumb to the severity of two successive winters; whilst rather strange, others immediately around are uninjured. This is rather unaccountable when you consider that soil and situation are the same. I have several hundred yards of Yew hedging of about 25 years' standing, where every here and there of from 2 to 6 yards are killed. Of Hollies, large and small, some are killed, some left, including all the varieties ordinarily grown. Holly hedges all killed, also Privet, Common Ivy climbing walls and trees, &c. Some of the Ivy I find is pushing again. Tree Box and even a good deal of Box edging is killed. Cotoneaster covering walls is also killed. I find that this is caused by the sun melting the snow off during the day and exposing it to the frost at nights. Wherever those things have been hid from sun they are unhurt. Every Standard and Climbing Rose is killed, and Dwarfs down to snow line. Some of the more tender are killed altogether. Amongst ornamental trees we have lost none but Cedrus Deodara; Wellingtonias, and other Pines have stood, many of them uninjured. Many Oaks and Ashes have had quite a struggle to push again, and are not yet in full leaf, and if the next winter proves severe, for a certainty they are doomed. Fruit trees have also suffered severely. Peach trees are all killed; Apricots partly so. Many Pears and Apples are severely crippled, so much so that they are only now (July 17) beginning to push. These are exceptional cases, the most of them having ere this made long growths, especially Wall Pears; but we have little or no fruit—a thing we have never failed in for these last thirty years. Cherries are also a failure, and hurt by frost; although they blossomed profusely, the cause I do not attribute to the severe winter, but to the cold gloomy summer of last year. All wood being imperfectly ripened was unable to resist the frost; and the fruit blossom, weak and deformed, after a partial expansion fell to the ground. I was not disappointed for I frequently said, twelvemonths ago, what the result would be.

Rock. By CHARLES B. P. BOSANQUET, Esq.

At Rock we are more than 250 feet above the sea. We lost all our Laurestinuses last winter, which were killed to the root, excepting where the snow protected the lowest branches; also Arbutus and Roses, but we did not suffer much otherwise. We have not a Peach on our hot wall this year. Last year we had a good crop.

Almwick Castle Park. By MR COXON.

For the winter of 1879-80, I have to report a much more serious one on

tree and shrub life than the winter of 1878-9. I think it has been the worst in my experience. Almost all Portugal and Common Laurels and Hollies have been cut down to the snow line. About half of the Evergreen Oaks and a great many Yews have also suffered in low situations. After getting about 70 or 80 feet above the level of the river, we have lost very few of the above shrubs. Trees with us have not been so severely dealt with, although a good many Oaks up to 50 years of age, have been considerably cut. But the fine growing weather we had in summer, has enabled them almost to recover. In coniferous trees we have not lost a great many. A few *Cedrus Deodara*, *Araucaria imbricata*, *Picea Pinsapo*, and *P. lasiocarpa* have been considerably cut and discoloured. But *Abies Douglasi*, *Picea Nordmanniana*, *P. nobilis*, and *Wellingtonia gigantea* have all stood very well.

November, 1880.

Major HOLLAND in transmitting these remarks, observes :—

“In my own small garden, almost the whole of the Roses (more than 500 in number) were cut down by the frost of December 3rd and 4th to the snow line. The thermometer registered here 1 degree F. minimum ; or 31 degrees of frost. I felt indebted to the snow for a protection that enabled me to have a very fine blow of Roses when the summer came. The vigour of their growth was something remarkable. I never saw shoots so long and so strong thrown from the lower stems of the plants.”

Report of Injury to Trees, Evergreens, &c., at Shawdon, Northumberland, by the Frost in the years 1879-80. By MR JAMES THOMSON.

Shawdon Hall, the residence of W. J. Pawson, Esq., stands on the north side of the Vale of Whittingham, 245 feet above the sea level. It is half-a-mile distant from the river Aln, and owing to its situation and surroundings, shrubs and evergreens planted here suffer much from frost. In December, 1879, the thermometer fell to 11° below zero. The frost continued for weeks, accompanied by a dense atmosphere, very destructive to vegetable life. All the Laurels, young Hollies, and many Yews, were killed here by this severe and continued frost. The winter of 1880 completed the destruction of many old Yews and Hollies that must have stood here, uninjured, at least for a generation. “The Shawdon Hollies” are so much injured by the frost of January, 1880, that it is doubtful whether they ever recover its effects. The lowest temperature recorded here in this month was 13° below zero. The Hollies referred to have been a feature of this place for several generations. They consist of two rows, sixteen feet apart ; the row facing south is composed of the Golden Edged, or Queen Holly. Originally there were seventeen trees in this row, planted about seven feet asunder. The height of the tallest tree in this row is 45 feet ; the other row consists of the common Green Holly, and several of them have been blown down. Fifteen trees are still standing, the bole of the largest measures seven feet in circumference three feet from the ground. Two trees in this row are joined together, at a height of thirteen feet from the ground, the *inarch* is so complete

that the two trees form one head. These interesting old Hollies were severely injured by the frost of 1879; and the winter of 1880 has killed most of their branches, and although new shoots are breaking from the main stems, it is doubtful whether they will ever recover the effects of two such severe winters. There is no means of judging the age of these Hollies; George Henderson, now in his 95th year, played under them when a boy, and they appeared old trees at that time. The *Cedrus Deodaras* here are killed to the ground, the same fate has befallen the *Sequoias*, which grow rapidly here; but the rarer *Coniferæ* have never been really grown here in sufficient numbers to test their hardiness.

The effects of the frost of January last in the Flower and Kitchen Garden here, were the destruction of every Standard Rose, with many of the Dwarf varieties. Peach trees are killed; they escaped the frost of 1879, which, in its results, cannot be compared to the destruction caused by the frost of 1880 in this district. Many Oaks standing in certain situations are killed, or so severely injured that they have to be cut down. The Furze that covered many heights around this place are killed to the ground; in many places the Heather has suffered severely. Judging from the effects, the frost of the years 1879-80 has been more destructive to vegetable life in this neighbourhood than any frost on record.

Eslington Park. By Mr JOSEPH OLIVER.

Eslington Park, one of the seats of the Earl of Ravensworth, is situated close to the Aln, and is ten miles west from Alnwick, and one-and-a-half from the foot of Ryle Hills.

During the long and severe winter of 1878-9, although the thermometer marked (at four different times) 6° below zero, yet the damage done to evergreen shrubs and trees was nothing in comparison to that done during the two nights' severe frost which occurred in the beginning of December, 1879, when the thermometer fell to 9° below zero.

At the former period only the lower branches of Common and Portugal Laurels were killed. Evergreen Oaks and *Garrya elliptica* were both killed back to the main stems. During the two nights' frost in December last, every plant of both Portugal and Common Laurels was killed down to the ground. Even the Hollies have suffered in a way we never could have expected. Many fine plants that have been planted over fifty years have been killed to within three feet of the ground. It is rather strange that the variegated varieties have suffered much less than the common sorts. *Garrya elliptica*, *Aucuba Japonica*, Evergreen Oaks, and a large plant of *Wistaria Sinensis* growing upon the front of the house, have all been killed to the ground. Many of the Apple trees have suffered severely, but none are killed. Strange to say the *Coniferæ* have almost escaped without any injury, with the exception of one plant of Cedar of Lebanon, about twelve feet high, which is entirely killed—no other harm is done. This plant was growing about seventy yards from the river Aln, and about seven feet higher than the bed of the river. Other plants of the same variety, growing upon higher ground, and a little further from the river, are quite unhurt. *Rhododendron*

Ponticum has stood well, the blossom buds being all killed, but little harm done to the wood. Yews, both English and Irish, Arborvitæ, Junipers, Tree Box, and Barberries, have all passed through the severe ordeal without betraying the slightest appearance of having received any injury whatever. Forest trees have not suffered at all.

At Glanton Pyke, about $1\frac{1}{2}$ miles from here, but much higher, everything is quite unhurt.

About 25 years ago the Laurels were all killed, the same as last December; but only the lower branches of the Hollies were then destroyed. The thermometer then marked 6° below zero.

Biddleston. By Mr JAMES DICKINSON.

Our shrubs, particularly Laurels, have suffered a good deal, but not nearly so bad as our neighbours nearer to the Coquet. We had some beds of Common Laurel cut down, which had not been cut in the same manner for twenty years, namely, 1860. All other trees and Conifers, of which we have only a small collection, are little the worse. Two years ago we suffered very little, as we had an immense covering of snow when we had the most severe frost; but we never had more than 28° that year. Last winter we had 34° , two below zero; while some of our neighbours had 7° below; and some even more. Last season, having such a cold, wet summer, the wood was never ripened, which made things more liable to the effects of the frost. Vegetables suffered a good deal. Broccoli was nearly all killed in both winters. Small plants did not suffer so much, as they were well covered with snow. Small birds were very much thinned last year. We never had to put nets on our fruit, but they have made up for it this year. It is very wonderful how they have gathered up. We have Blackbirds and Thrushes by hundreds. We had great difficulty in saving small fruits, not only from the birds, but from Wasps, which have been unusually numerous this year. Wild animals do not seem to have suffered much.

N.B.—There is a very nice lot of old trees on the place, mostly Ash, Beech, and Sycamore.

. October 9th, 1880.

Harbottle. By Mr ANTHONY OLIVER.

Account of the Effects of the Winters of 1878-79:—

We passed through the winters of 1878-79 without the least damage to fruit, or ornamental trees, or to shrubberies; there being a good covering of snow during the severe frosts. The lowest temperature registered was 27° of frost.

Birds suffered to a great extent. The Thrush was nearly killed out; and very few Blackbirds were left; so much so that it was not necessary to protect the fruit with nets, there being no birds to destroy it. The spring and summer of 1879 were cold and wet up till September, when we had a few weeks' dry weather, but not sufficient to ripen the wood and buds of the

previous summer. Hence when the winter of 1879-80 set in so severely, everything suffered more or less. Portugal and Common Laurels, *Aucuba Japonica*, Clematises, Roses, Holly (both green and variegated), were killed right and left. Very many of the buds of Apple, Pear, and other fruit trees were killed. The glass went down to zero. Those buds that escaped the frost broke into life so weak that they soon became a prey of insect life. Never did I see such a swarm of *pests*; not only fruit trees and bushes, but many forest trees lost nearly all their leaves.

October 5th, 1880.

Brenckburn Priory. By C. H. CADOGAN, Esq.

With reference to the effect of the extreme cold that passed over the Border counties in December, 1879, we appear to have nearly escaped its ravages at Brenckburn, where nothing is killed, except one or two large Hollies, and these most capriciously selected from out of a crowd of others, very likely individuals of a tenderer type; for I have in former cold winters noticed the same thing, two Hollies side by side, the one killed, the other left untouched, soil, situation, and every external appearance being equal. My *Araucarias* are unhurt. *Picea Cephalonica* has the top killed about three feet, tree thirty-five feet high, otherwise it is entirely uninjured. *Cupressus macrocarpa* was killed to the ground, tree about 20 feet high. *Picea Smithiana* severely injured, is alive and pushing again. Italian Artichokes are killed. Whins, Blackberries, and Broom are generally killed. The top growth of one of three *Wellingtonias* was killed about 6 inches; otherwise they are not hurt. These trees are all in near connection and close to the riverside. Of course, the Common Laurels are killed in most places, but not in all situations. Virginian Creeper, on the wall of both house and church, is quite uninjured; but one on an unattached garden wall is almost entirely killed; it is alive and that is all. I attribute this capricious effect mainly to the very narrow valley in which all the plants mentioned are placed. I think it too narrow for the frost to gain full power; or it may be the morning sun does not affect the place, owing to the high precipitous bank to the south and south-east.

20th October, 1880.

Felton Park. By Mr JOHN CROSSLING.

I am glad to inform you that the frost has not done so much harm here, as at many other places. The shrubs have hardly been hurt, except the Laurestines and the Bays; and I have lost a few Roses. The Peach trees also are hurt, and there is no fruit this season. Apples are a bad crop. The hardest frost was on the 4th of December, when we registered 32°. We have a very dry subsoil at Felton, which saves our shrubs. The Wasps have been most dreadful this season. My men have already taken 112 nests round the garden. We had almost none last season. Whence have they sprung after so hard a season? On account of their numbers, we will have very little fruit left; the more we kill the stronger they come. The slugs are almost as bad. In milder winters we have them much less in quantity.

Morwick. By the Rev. JAMES I. DAND, Cheyington Rectory.

Morwick is situate on the south bank of the Coquet, two miles west from Warkworth, 100 feet above the sea, and 50 feet above the Coquet, from which it is distant about 400 yards. The grounds are exceptionally well sheltered by trees, and a hill towards the east, effectually breaks the "sea breezes." The lowest temperature on the "cold Wednesday night and Thursday morning" in December, 1879, was 6° Fahr., *i.e.*, 26° of frost. The thermometer which registered this degree of cold was placed against a wall facing W., 3ft. from the ground.

Trees and Shrubs which bore this cold with impunity:—

All forest trees, such as Oak, Ash, Lime, Scotch and Spruce Firs (Alders and Willows, near the river also), escaped.

Araucaria, Douglas Pine, Columbian Pine, Wellingtonia, Acacia (this tree, a very fine one, of 60 or 80 years' growth, suffered slightly), Tulip Tree, Cedars, Yew, Rhododendrons of all kinds, Portugal Laurel, hardy Roses (such as "John Hopper," "Gloire de Dijon," and others of that nature), Standards.

The more delicate Roses, trained to a wall with a south aspect, and a very fine Wistaria (I am not sure that I have given you the correct name of this climber, it is evidently allied to the Acacia, and has a long flower of a pink colour, shaped like a Laburnums), which was also trained against the same wall, were killed to the ground, but are now growing again. The Common Laurel, or Bay, was also killed to the ground. The Whins were quite killed and have not yet sprung again. There are some very fine *Ilex*es on the lawn, probably the largest in the North of England. Their leaves were all shrivelled and browned, and dropped prematurely, but they are now in very fine foliage. A Fig tree, also against a south wall, was killed to the ground, but is now shooting from the root (this tree is probably 70 years old).

The smaller birds, Tits, Wrens, &c., have disappeared. Thrushes have almost vanished. Fieldfares, I think, died to a bird. Blackbirds and Robins did not suffer so greatly. Rooks did not suffer at all. There were, three or four years ago, a great number of Owls—the common Brown Owl—now I hear none. (They have never been interfered with, and I think the frost could scarcely be the cause of their absence). I might mention that Wasps are numerous this summer, beyond all precedent, and have constituted themselves a plague; attacking people engaged in harvest work, and most unpleasantly invading any room whose windows are left open during the day.

Rabbits have become nearly extinct; their absence is no doubt owing, in a great measure, to the long-continued snow of the previous winter. The snow covered the ground, it never "drifted," to the depth of two feet, and remained for ten or twelve weeks. Partridges suffered severely; so apparently did Woodpigeons. Pheasants did not suffer at all—they are very numerous this year; they have not been reared artificially.

Sept. 6th, 1880.

Barnhill, Acklington. By JOHN TATE Esq.

The winter of 1878-9 was a severe one here. Bay trees, Laurestines, and

Whins were cut down to the ground, and our Roses suffered a good deal. Last winter, however, was either still more severe or the Shrubs had not recovered the shaking their constitutions had received in the former year, for, with the exception of three, every Standard Rose we had died, and other delicate shrubs suffered in an equal ratio. One very fine double Whin, after looking tender for one year, is now altogether gone; and the Laurestines are putting out very feeble shoots. The large Whin Coverts adjoining the river banks here, which used to have an overpowering perfume in spring and summer have not flowered for two years, and many show no signs of life.

Sept. 25, 1880.

Morpeth. By MR GEORGE EGDELL.

Effects of the Frost on Shrubs, etc., in different stations :—

At High Church, Morpeth, with an elevation of 175 feet, the thermometer fell to 5.0 on the 5th, and to 3.0 on the 6th December, with 1 foot of snow on the ground.

The only shrub that suffered from the frost was the *Aucuba Japonica*. Hollies, Laurels, Wellingtonias, &c., were not injured in the slightest, while in the town of Morpeth, 90 feet above sea level, with the same degrees of frost, the snow lying on the ground quite a foot deep, a great number of shrubs were cut down to the snow line; while others suffered severely by losing all their foliage, which had a brown, miserable appearance all the spring, until thrown off by the new growth.

Portugal Laurels and Hollies suffered especially.

It may be noticed that there was no wind during this severe weather. I have often observed that when a frost is accompanied by a wind, shrubs suffer more, even when the frost is not quite so severe.

The summer of 1879 was very wet, and in some low-lying sheltered situations the various evergreen shrubs kept growing until late in the autumn, and as we had a heavy fall on the 8th November, with severe frost, the young growth was not matured sufficiently to bear the extreme cold which followed.

High Church, Morpeth.

Dunston Hill, Co. Durham. By RALPH CARR-ELLISON, Esq.

On the Effects of Low Temperature on Vegetable Life, and on Birds :—

The second severe season of November and December, 1879, has left some instructive effects. These indeed are quite sufficient to show how rapidly a repetition of cold summers, early and protracted winters, followed by tardy and chilly springs, would reduce our Northumbrian vegetation to a condition not very superior to that of Iceland.

The Cypress-like, or more briefly Cypress-Poplars, improperly called the Lombardy Poplars (as it is not a native of Italy, but of Persia), has been quite killed in many localities by the cold of last winter, which, in low

situations fell to zero of Fahrenheit. To endure such a temperature this Poplar must have been previously invigorated by warmer summers than it enjoys with us. In other words it can bear intense cold only in a climate which possesses compensating summer heat, and where perhaps the mean temperature is somewhat higher than ours, and equal to that of Central England. It has escaped, however, unhurt with us in many moderately-elevated sites. I remember the Cypress-Poplar (for so it is well named in French and in Latin) being killed at Whittingham by frost, when 40 feet high, and now again the only few trees of the species there have been destroyed, though growing in the fine deep soil of the inn garden. Ten or a dozen of my own at Dunston Hill, of similar height, have escaped unhurt. But at Riding Mill, near Bywell, many vigorous young specimens, 20 feet high, have perished, though standing well above the river upon a fine sandy soil among flourishing birches, and enjoying adequate shelter.

The Black Italian Poplar (*Populus nigra, monilifera*) has nowhere been harmed. It is a true European native, springing up abundantly from seed on the extensive gravel-beds of the Italian rivers, and, so far as I could perceive, with remarkable uniformity of foliage. I looked narrowly on these gravels for young plants of the Cypress-Poplar (so improperly called Lombardy in England) but could see none, though the hedge-rows were well furnished with this species. If it propagates itself by seed in Italy, it does not do so apparently on the river gravels, but perhaps requires the soil of a field or garden.

By the way, the name of *Populus nigra, monilifera*, the Black or Necklace-Poplar, was given to the other species from the very dark colour of its long crowded and conspicuous catkins in spring, which, when they fall, are strung by children into necklaces. But this inflorescence is seldom seen in the North of England.

I lost last winter, at Dunston Hill, nearly half the plants of a fine covert of Yews, about 10 feet in height. They were growing with great vigour among Hazels and Elders at the bottom of a small dene, which has a northerly descent. The terrible frost of November and December caught them as if by surprise, and utterly destroyed the large proportion just mentioned. Happily, enough remain to extend themselves over most of the vacancies. The thickness of the stems was, near the ground, generally that of a man's arm. In other places my Yews are unscathed, whether old or young.

Aged Hollies have been killed, or sorely scathed, in many localities all over the country, whilst young healthy plants have resisted the intensity of the cold successfully. Portugal Laurels have been destroyed where old and declining in vigour, but not young or when thriving and healthy. The same is true of the Common Box, in every shrubbery. It is for the most part unscathed. Araucarias, Deodars, and Wellingtonias have all stood unharmed at Hedgeley; also the thriving plants of *Laurus Azorica* growing there. But at Dunston Hill this fine species will barely exist. It requires a deep and fertile soil with a somewhat humid air, unless the climate be warmer than ours.

I rejoice to say that some venerable Ilexes, growing in shrubberies at Whickham, have survived both these last most severe winters, and are

struggling to re-establish their verdure, though I believed them to be absolutely dead in the spring of 1879.

Cupressus Lawsonii propagates itself freely by seed at Hedgeley, being quite hardy there.

On our dry, light soil at Dunston Hill, the *Cryptomeria Japonica* succeeds best, surpassing *Thuja borealis*, which prefers a moister soil and atmosphere like that of the neighbourhood of the Cheviots.

As regards birds, the Song-thrush was very rare here last spring, but numbers came in August and September, from other districts, frequenting our turnip-fields and shrubberies. They all departed in November from Dunston Hill, whilst, for the first time, we are likewise without any Blackbirds this winter, there being no berries of any kind to tempt them to stay.

Yew-berries are the favourite food of the Song-thrush in early winter. Of these there was but half a crop this season.

Not a single Redwing or Fieldfare is visible or audible in our neighbourhood. It is probable that the small numbers of both species that can have reached Britain in the autumn of 1880, after the great mortality of them from cold and hunger in 1878-9, have gone far southward to the region where mistletoe is plentiful, that is to say, the South of England, together with Northern and Central France, with Switzerland.

As respects the tenderness of the Redwings under the English winter, though natives of Norway and Sweden, we must bear in mind that by far the greater number of them, which visit us in ordinary autumns, are assuredly little more than nestlings, which perhaps could barely fly at the end of the preceding June, owing to the lateness of spring in the high latitudes they inhabit during the fine season. Consequently they are not so vigorous as even our young Song-thrushes, which were capable of flying six weeks or two months earlier. The same is true, in a lesser degree of Fieldfares, of which the younger ones suffer severely. It is pretty certain that the young of our English Missel-thrushes migrate largely into France, as there is a great accession of the species there in October and November. Their annual arrival is hailed by the bird-catchers, and by the epicures, with especial interest. A French cook will send up a dish of Missel-thrushes and Redwings in an irresistible form to the best tables, each bird enveloped in some delicate jelly of pearly hue; not in the rude and naked fashion which an English cook would be content to follow.

Middleton Hall, Wooler. By GEORGE P. HUGHES, Esq.

At Middleton Hall, our chief loss has been in Laurels, killed by the frost of November, 1879. I had promised to plant the north side of the Ilderton Church with Portugal Laurels, but when we went to lift them last spring, we found the best plants, 6 or 7 feet high, growing in a mossy cut with the shelter of a young plantation behind, completely killed to the root. In our garden, large Laurel hedges have been killed to the main stem, but are sending out fresh branches in the majority of cases. We had many flowers, especially Roses and Geraniums, killed in the greenhouse during last and the

preceding winter; even with a large paraffin lamp burning beside them, a few inches off.

My young Californian Conifers have in, I may say, every case come through; but a valuable Australian Eucalyptus, 9 or 10 feet high, was killed, much to our grief.

Our Forest Trees have suffered very little, though at Chillingham a number of old trees had died.

21st July, 1880.

List of Trees and Shrubs injured by Frost last Winter, 1879-80.

By MESSRS WILLIAM FELL & Co., Wentworth Nurseries, Hexham.

Araucarias, very severely cut down.

Aucuba Japonica, do., even worse.

Cedrus Atlantica, cut in the young wood.

„ *Deodara*; a good deal affected, but not so bad as last season.

Cryptomeria Japonica suffered severely.

Taxus baccata (Com. Yew) severely cut with the frost.

Thuja Chinensis suffered in those branches not well ripened.

Thujopsis Borealis suffered, but not so bad as last year.

Wellingtonia gigantea—very severely, especially large specimen plants.

Berberis Darwini, severely injured.

„ *Stenophylla* do.

„ *Jamiesonii*, touched, but not so bad as above.

„ *Empetrifolia*, do. do.

Broom (White and Spanish), badly cut up.

Box, partly injured, especially in low situations.

Daphne Cneorum, rather severely touched.

Hollies, common and variegated, both very severely cut.

Jasmine (White) badly cut.

Laurus nobilis (Sweet Bay) badly cut.

Laurel (Common) do.

Laurel (Portugal) very badly cut.

Laurestinus do.

Privet (oval leaved), very badly injured.

„ (common or evergreen), touched in wood and stripped of foliage.

Poplars (Lombardy), rather severely affected.

Oaks (evergreen) cut a little.

Whins, the double, affected; single, not.

Apple trees slightly affected.

Pears not so bad as Apples.

Peaches, Nectarines, and Apricots, rather badly injured.

Walnuts slightly cut.

Rhododendrons slightly affected.

N.B.—The above nurseries cover many acres of ground.

Vicinity of Hexham. By Mr JAMES HEWITT, Hexham.

Trees destroyed or damaged at Spital, half-a-mile W. by N. from Hexham :—

Ivy, almost totally ; Peach trees (on walls) very much ; Laurels (both Common and Portugal) and Privets cut down to the ground. Yews very much damaged. Ivy covering the gardener's house—many years old—cut down to the ground. Ivy, which had adorned a very large Oak tree 60 or 70 years, totally destroyed.

At Hexham Cemetery, a mile-and-a-half west of Hexham, one mile from Spital—Hollies (both kinds), Privets, and Yews, all sore damaged. A very fine specimen of the *Araucaria imbricata* nearly killed, and as brown as a nut even now.

At Hermitage, half-a-mile *direct north* from Hexham, destruction general. Out of somewhat over twenty Holly trees adorning the hedgerows, I counted eighteen cut down to the hedgetops. At Beaufront and Sandhoe mansions, 2 to 3 miles N.E. from Hexham, the destruction of evergreens nearly complete ; and the same at Newton Hall, about six miles eastward, and the same at every place within the same radius. In the town of Hexham some Ivy, covering the walls of a gentleman's residence, which has escaped unscathed during many years, was almost totally destroyed, although under the shelter and protection of large trees.

Hexham, Nov. 1, 1880.

Hexham. By Messrs JOSEPH ROBSON & SON, the Nurseries,
Bank Foot, Hexham.

Aucuba Japonica almost destroyed.

Bay Laurels bad.

Do. *Rotundifolia*, hurt, but not so bad as the above.

Do. *Colchica*, do. do. do.

Do. *Caucasica*, do. do. do.

Do. Portugal, badly hurt.

Do. Common, worse, if anything, but more likely to come again.

Hollies of all kinds, except *Aquifolium*, very bad.

Ivies bad.

Rhododendrons very slight.

Yews scarcely touched.

Common Privet bad.

Ovalifolium Privet do.

Roses bad.

Fruit trees, Peaches, Nectarines, very bad. Apricots scarcely touched.

„ Pears and Apples, wood much damaged.

Plants not damaged :—

Retinosporas—the whole of these have stood without a tinge of frost, notably, *plumosa*, *P. aurea*, *leptoclada*, *squamosa*, *Ericoides*, &c.

Cupressus Lawsoniana and varieties stood well.

Yews all stood well.

Arborvitæ—American, Chinese, and other sorts, good.

Temperatures, &c., in the Hexham District, for December, 1879.

By Mr WILLIAM TROTTER, South Acomb, Stocksfield.

Snow fell on six days, and the amount when melted amounted to 0·82 of an inch. The rainfall in the corresponding month of last year was 3·62 in. The total rainfall for the year ending December 31st, amounts to 29·00 in., against 35 inches for the previous year; the decrease on the year being 6·00 inches. The temperature for the month was about an average. The first week was exceedingly cold, being the coldest on record in the locality. The second week was also below an average; but the third and fourth weeks were much above an average, there being only two cold days, viz., 26th and 27th. On the 4th the minimum thermometer stood at 1 degree, or 31 degrees of frost; and on the grass at 5 degrees below zero, or 37 degrees of frost. The maximum thermometer in shade during the day did not reach more than 16 degrees, or 16 degrees of frost. The mean temperature of the week was only 20 degrees. The nearest approach to the cold on the 4th was on Christmas Day, 1860, when the readings were 2 degrees higher. Barometer variable: highest reading (corrected) 30·542 inches on the 10th; lowest (corrected) 29·502, on the 27th. Snow fell on 1st, 2nd, and 5th. Gales occurred on 27th and 28th. Beautiful lunar halo on 28th at 6 p.m. Prevailing winds SW. to NW. on 24 days; on remainings 7 days from NE. to SE.

Mr Trotter makes the following observations:—"Newton Hall, Col. Joicey's, stands at a considerable elevation above the river Tyne, and between two and three miles north of it, opposite to Stocksfield Station. The frost there was not nearly so intense; the instrument showed 3 degrees below zero. There was scarcely any damage. A few Common Laurels suffered, and some double flowered Furze was damaged. At Minsteracres, the seat of Henry Silvertop, Esq., which stands considerably higher than even Newton Hall, but on the south side of the Tyne, nearly on the crest of the high hills which divide the valleys of the Tyne and the Derwent, there was comparatively no injury done. I was over the crest on the evening of the 3rd December—the coldest night in 1879—after dark. The road is very much exposed, and it was certainly very cold, but it was infinitely worse, when I got into the vale. On the hills the atmosphere was quite clear, but in the bottom there was a damp haze, and do as one would, one could not keep the cold out. The frost at Stocksfield was 5 degrees below zero. At Riding Mill, two miles west, it was 15 degrees below zero. How there happened to be a difference of 10 degrees in so short a distance, and at about the same altitude, is a matter of conjecture. There is no doubt of the accuracy of the observer."

On my way to Gilsland, Sept. 28th, I halted at Hexham. Near Stocksfield, I noticed the havoc among the Lombardy Poplars. One of the company remarked that in Derbyshire, where he had been recently, most of the Poplars were destroyed. The Oaks there, I saw, had suffered, and were full of new shoots, and in the plantations about Hexham, the young trees carried crops of summer-formed leaves, as if in a state of rejuvenescence. At the Beacon, Admiral Waddilove's, high Hollies were much shattered, and some Laurestines were cut down. I was told that over that part of the country, there was very little fruit on trees, either old or young, one reason assigned

being that 1879 having an almost sunless summer, the young wood never got ripened.

On this subject, Mr A. Kerr makes the following remarks as more particularly applicable to the Border districts :—"In regard to fruit produce, it is well known that in England and Scotland the present year (1880) has been one of the most barren on record. This remark applies to Apples, Pears, Plums, Apricots, and Peaches. This failure can only be attributed to the influence of excessive wet and the absence of solar heat throughout the entire year of 1879, succeeded by an unprecedentedly early frost, as intense as that of a Russian winter. This proved too much for vegetation in its immature state, stopping and congealing the life-giving sap in the vessels of the plants, rupturing the tissue in the tender unfinished growths, and thereby killing them back to the old wood. As a natural consequence the trees produced little blossom of a perfect kind; and although I must admit having seen numerous trees well furnished with flowers, the majority of these flowers, when inspected by a practical eye, were found 'decrepid abortions,' showing the fertilizing organs, less or more, incomplete, and therefore impotent to produce fruit. Much depends also upon the weather, when the fertilizing process is in operation. Should it happen to be cold and very wet, little fruit may be expected. The combined influence of wet and cold robs the pollen of its fertilizing quality, and this, together with other influences, affects the fruit crop."

J. H.

Memorandum of Trees which suffered from the severe Winter of 1879, in Tyneside District. By Mr JOHN BALDEN, JUN.

ASH.—The Ash has suffered most of all the deciduous trees, both young and matured trees in many cases being killed.

ELM.—Both the English and the Wych have suffered, the latter especially, from Frost-rent.

HOLLY.—In low lying parts near the river (and consequently under the influence of the Frost-rimes), many fine old trees have been killed, and others severely damaged. In the higher parts they have not received quite so much.

LARCH.—Among the whole of the Forest Trees none have fared worse than this valuable tree; in many places they have been killed by hundreds. In plantations up to 30 years of age, the most damage has been done, the older and mature trees have not suffered severely.

OAK.—Damage to the Oak does not exceed the twigs and branches, although some have suffered from Frost-rent.

POPLAR.—Twigs and small branches killed and growth checked.

PRIVET, THORN, AND WHIN suffered more or less, and growth thrown back many years.

Among the ornamental trees those which have suffered most are the *Araucaria imbricata*, *Arborvitae*, *Cedrus deodara*, *Wellingtonia gigantea* all of which have either been killed or severely damaged. Also the Laurel has been killed to the ground.

Dilston Office, Corbridge-on-Tyne, Dec. 22, 1880.

Chesters, Walwick, and Parkend, North Tyne. By JOHN M.

RIDLEY, Esq., of Walwick Hall.

Mr Bosanquet received the following report from Mr Ridley, when writing to ask him to send particulars about the cracking from frost of a Maple, at his brother's, Mr Thomas Ridley's, Parkend, North Tyne:—

What happened to the Maple at Parkend, befell all the Beech trees at Chesters, where you may see the marks down the stems of the trees for many feet, where the sap of the spring has run down, escaping from the wounds caused by the cracks in the stems and branches, by the severe night when the thermometer was 13 degrees (14°) below zero, Fahrenheit. All the Hollies are cut down there to the ground, many quite killed. Most of the Yew trees were killed, *especially those under trees*, where you would have expected them to have suffered least. I observe the following to be killed:—

Elm, Oak, Yew, Hollies of 100 year's growth and under, Broom and Gorse, Ampelopsis, Roses of all kinds, Piptanthus Nepaulensis, Cotoneaster against wall, Jasmine against wall, Honeysuckles various, and Peach trees; while all the Cypresses have escaped.

Forsythia, Cupressus Lawsoniana, and the delicate species have all escaped scot free.

We are 240 feet above Chesters, and our thermometers (*accurate* here and at Chesters, being well-made and tested instruments) were not below 9 degrees below zero, Fahrenheit. The special Maple alluded to is a tree of 50 year's growth.

Just at sunrise it cracked with the report of a pistol, the stem, gaping wide enough to admit a man's hand to its centre, is 2 feet 8 inches in girth, and the bark is now so closed up you cannot see the fracture, but there it will be so long as the tree exists. I doubt if a *vertical* fracture of this kind ever heals; it is a shake, formerly called a *wind* shake, but evidently one from temperature. I cannot explain the phenomena of the Dutch Elm breaking off short across in *great heat* in full foliage. Of course, the foliage adds to the weight, but it keeps off the sun. Why should the wood break straight across the grain under these conditions, whereas in a wind if broken it would be much more of longitudinal fracture? this Elm is a short-grained wood anywhere.

August 19th, 1880.

Tyneside. By REV. J. C. BRUCE, LL.D.

I see you are to read some remarks upon the frost of last winter.

Nowhere (I should suppose) have its ravages been more remarkable than at Hexham and Chollerford. A long line of very fine tall Hollies at the Hermitage (on the south side of the river, in the hedges beside the road), have been killed. In Mr Clayton's garden at Chesters the Laurels and Portugal Laurels have been almost exterminated, and Holly trees that had stood the frosts of a hundred winters have been destroyed. I am persuaded it was the moisture accompanying the cold that did the mischief; for at Walwick which is considerably above Chesters no harm was done. The Yew trees suffered severely at Chesters and elsewhere.

Effects of Winter 1879-80, at Humshaugh, Northumberland. By
the Rev. HUGH TAYLOR, Humshaugh-on-Tyne.

Humshaugh House is about 280 feet above sea-level, and about 100 above the North Tyne. A thermometer certified at Kew to be at $32^{\circ} \dots + 0.7$, placed in Scottish Met. Soc. box, registered on Dec. 1 to 2, 1879, 2° ; Dec. 3 to 4, 1879, 11° below zero, and at 9.45 on the 4th, still 7° below zero.

All the Shrubs mentioned (except those stated to be older), were obtained from nurseries in 1875, good specimens only being taken, and were very healthy up to the autumn of 1878. Many were injured in the winter of 1878-9 and received the finishing stroke in 1879-80. At Humshaugh House the following were killed:—*Aucuba* of varieties 10, *Araucaria* 2, Spanish Broom, Chinese Box, *Cedrus Libani*, *Deodara* 3, common Yews in a hedge about 40 years old 6, Japanese Yew (? *Podocarpus Japonica*), very large Irish Ivy on north wall of house 3, and *Roegneria* on south wall (where *Pedata* was uninjured), large white Jasmine on south wall 2, and a Cherry, Evergreen Privet, roundleaved, in a hedge and open, about 30, Japanese Evergreen Privet 3, *Laurestinus* 2, *Daphne Mezereum* 3, Double Whin, Sycamore 8ft., 3, all Wallflowers single and double, all Lothian Stocks, Penstemons, *Antirrhinums*, 2 Pyramid Pears, *Duchesse d'Angoulême*, and a few others.

Cut to the ground or much injured, have made fresh shoots, but some probably not worth keeping:—*Berberis Darwinii*; common Holly up to about 40 years old 20, all the Golden and Silver variegated (including 2 Silver about 80 years old) 12, Skew-leaved, *Hodgensii* 3, *Myrtifolia* 3, Yellow-berried, Hedgehog; *Cryptomeria elegans*, 2; all the Portugal Laurels, including a dozen large bushes, 3ft. high, the Bay and its upright variety, 30; Orleans Plum 3, *Abies Douglasii* 2, *Picea Nordmanniana* 3; large *Pyrus Japonica* in a neighbour's garden; *Wellingtonia* 4; Cherry 2 and Plum 2 on east wall, much young wood killed; all the Whins in the neighbourhood, except a few in woods. Roses: Gloire de Dijon, Souvenir de Malmaison, Celine Forestier on south wall of house (where *Coupe d'Hébé* and Madame Victor Verdier little worse); Gloire de Dijon 2, Depuy Jamain, Duchess of Edinburgh (tea', on east wall; all in the open ground, about 200, except a few of the old white, blush, and cabbage, which were little injured); but all made vigorous shoots and bloomed well last summer.

Slightly injured:—*Berberis Aquifolia*, *Deutzia Crenata* fl. pl., *Pyrus Japonica* 2 small; Ivies—*Minima*, *Algeriensis*, *Rægneriana*; Common Privet, *Weigelia Rosea*, *Wistaria* on south wall of house; 5 Apricots had a very large crop in 1879, though Moorpark did not ripen their fruit, last year only a few fruit—the first failure in 8 years. Orchard Apples same as Apricots.

Uninjured:—Common, American, Siberian, and Chinese Arbor Vitæ; Box—Common and *Hondswothieasis*; common yews 12 up to 60 years old, Irish yews 6, *Taxus Adpressa*, *Taxus stricta* 6; *cupressus Lawsoniana* 8, *Thu-jopsis Borealis* 6 up to 9 feet, *Pinus cembra* 2; Ghent azaleas, hardy azaleas. Ivies:—*sagittifolia*, *digitata*, *pedata*, *argentea* of 4 varieties large and small leaved, 4 others, all on an east wall; yellow jasmine on south front of house;

Picea nobilis, *Retinospora squarrosa*, *plumosa*, *plumosa aurea*; *Thuja Lobbiai* 12, *Viburnum Opulus*. *Rhododendrons*—2 or 3 hybrids dead, but about 20 uninjured. *Clematis*—*Jackmanni*, *Star of India*, *Alexandra*, *Mrs Bateman*, and 6 others, on walls or trellis, though all cut to the ground, flowered well.

In the winter of 1878-9, Brussels Sprouts, curly greens, celery, much injured; broccoli killed; cabbage, lettuce, and prickly spinage uninjured here. Last winter, vegetables were not much injured, only a few broccoli which had not been "laid down," were destroyed.

At the *Chesters* (Mr Clayton's), about a mile from Humshaugh, 240 feet above the river, 14° below zero was registered. All the Hollies except two small ones, many very large and other Yews, all the Box-trees and Privet are dead. Many Elm, Beech, and Oak trees are split. Several large and small Yews, however, are uninjured.

At Lincoln Hill, about one mile west of Humshaugh, 400 feet above the sea, Hollies and Yews much injured and many of them dead. Laurels all cut down.

At Walwick Hall, about half a mile west of Lincoln Hill, 495 above sea level, 315 above the river, there are many fine Hollies but none injured in the least, merely the tips of a very few leaves on some of them being "scorched."

As distance above a river seems to have generally so much to do with the effect of frost, I may mention that Humshaugh House is about half a mile from the North Tyne, "as the crow flies," Chesters a quarter, Lincoln Hill three-quarters, and about 220 feet above it, Walwick Hall three-quarters.

In the North Tyne valley, so far as I can learn, only one Thrush was heard in 1879. Blackbirds, usually very numerous, have been so few in number that it has not been worth while to net the fruit. Last spring there seems to have been an immigration of Thrushes, for there were six or seven pairs within two miles of Humshaugh. Starlings seem to have been much thinned. In some parts of the south of England Chaffinches were said to be nearly extinct, but here I saw last spring at least one flock of about 300. Dabchicks reared young for some years at Haughton Castle pond near this. A single bird appeared in 1879, but I did not see one in 1880.

Jan. 1, 1881.

Bingsfield, Corbridge-on-Tyne. By JOHN COPPIN, Esq.

At this place, about 450 feet above the sea, with a northern aspect, the weather last December was extremely severe, the thermometer in a Stevenson box, four feet from the ground, marking 10° on December 4th. Large Portugal Laurels, Common Laurels, *Cotoneaster microphylla*, against a wall; another standard *Cotoneaster*, *Berberis Darwinii*, Common Privet, *Menziesia polifolia*, *Ruscus aculeatus*, *Hypericum calycinum*, *Helianthemum roseum*, and woodbine were killed to the ground. The common Yew, Box-tree, and several sorts of Holly were severely damaged; some varieties of the latter were cut to the ground, whilst others, principally silver-leaved, lost nearly all their foliage. Forest trees also suffered very much, especially the Oak, Ash, and Lime; indeed, some of the first two appeared to be killed outright, as they produced no leaves throughout the following season. The Hawthorns (almost

trees in this neighbourhood) had no bloom on them, while the Whin in the adjoining fox coverts was nearly destroyed. We had a large show of blossom on the Apple and Pear trees, but very little fruit, except on two or three trees against a wall sheltered from the N.E. winds.

Several of the smaller birds, especially Thrushes and Robins, fell victims to the intensity of the frost.

The temperature was—

Dec. 2	max. 25	min. 5.
„ 3	„ 20	„ 3.
„ 4	„ 8	„ 10.
„ 5	„ 15	„ 1.
„ 6	„ 30	„ 8.
„ 7	„ 28	„ 10.

Dec. 31st, 1880.

ROXBURGHSHIRE.

Springwood Park, Kelso. By Mr GEORGE WEMYSS.

The frost which prevailed here in December, 1879, and did so much damage to trees and shrubs, was not only intense but unusually prolonged. The temperature had begun to decline on the 22nd November, when the minimum reached 25°, and from that date the frost continued more or less severe till the 15th December, when the minimum rose to 3° above the freezing point. The extreme low temperature, however, and doubtless the destructive period, extended from the 1st to the 10th of December, when the minimum, with only one exception rose to 9° above zero, as may be seen by the following readings of the thermometers during these ten days:—

Date.	max.	min.	9 a.m.
1879.—Dec. 1.	31°	2°	26°
„ 2.	33	—6	16
„ 3.	11	—16	4
„ 4.	27	—5	16
„ 5.	32	4	24
„ 6.	30	6	16
„ 7.	31	5	23
„ 8.	34	9	9
„ 9.	38	17	34
„ 10.	30	8	17

Had the previous summer been warm with much sunshine the damage to vegetation would have been less, but being otherwise the year's growth was not sufficiently ripened—not only the young twigs, but the growth generally, as was readily seen by the breaking up of the cellular tissue of many trees and shrubs hitherto considered hardy.

There was also much cloud during the previous summer, and June, July, and August furnished a greater rainfall than any of the other months of the

year. Of the ninety-two days of these three months there were only ten on which rain did not fall.

The severe frost of December, 1860, when the temperature here went down to 9° below zero, destroyed many fine trees and shrubs; Oaks, Yews, Hollies, Box, &c., however, were not hurt. But it has been otherwise with the frost of 1879. Oaks have suffered much, and although none have been killed, yet the condition of a few is such that it remains a question if they will ever make fine trees. All the young shoots, many of the small branches and several large ones have been destroyed. Under some of the trees the ground was covered with dead twigs during the summer, that had dropped off as the trees came into leaf, which was unusually late, as nearly all the buds that would have produced young shoots had perished; and other buds—what may perhaps be called latent buds—were destined to take their place in furnishing the means of the growth of the tree. Where any of the proper buds had escaped, the growth of the shoot was exceedingly rapid, producing in some cases long willow-like growths with large unshapely leaves of great substance. The longest of these that I found measured six feet ten inches. This shoot was taken from an oak eight feet in circumference at four feet from the ground. The leaves on this shoot were not remarkable, measuring only about six inches long, but large oak leaves were very common on this tree and many others—the largest I have is 12½ inches by 7 inches broad. The trunks of oak trees, although not frost-split, were hurt, as was seen in the operation of peeling them for bark. From an unequal distribution of the sap, large patches of the bark adhered persistently to the wood.

As regards Hollies, many of them are dead, a few slightly hurt, others very much; but wherever there were signs of life in any of them, they have been left, if peradventure they may recover from the injury they have sustained. It may be worthy of remark that here there were two very old Hollies and one has been killed and the other has escaped; they were of the same variety, their age is not known. The dimensions of the one that was killed was 34 feet high, and with very spreading branches; the trunk short and 9 feet 7 inches in circumference. The one that is left is much taller, but not near so spreading.

It was not seen that Yews had suffered so much till mid-summer, when one branch after another continued to die till late in the autumn. In early spring it was evident that some would die, but many kept their verdure till summer and even autumn before the leaves changed their hue. The large yew hedge on either side of the green walk escaped unhurt; its broad dense top kept a heavy coating of snow throughout the intense frost, which, doubtless, formed a good protection.

One *Wellingtonia gigantea* has been killed, the others are hurt. Walnuts were very much destroyed, in one the large branches are dead to the trunk. *Juniperus Virginiana* (Red Cedar) and *Cedrus Atlantica*, like the Yews, have gone off bit by bit; out of seven trees of the latter, only two remain. As for *Cedrus Deodara*, all are dead. Elders, Briars (Dog Rose), and Privets in the woods are much hurt and made little growth.

From what has been said of these hardy trees and shrubs, the fate of those less hardy will be readily conceived. When speaking of only what is hardy

it may be mentioned that, in the garden, Cherries and Plums stood the frost well, but Apples and Pears suffered greatly; not only were the fruit buds killed, but in many cases the *spurs* perished. The fact may also be referred to, that in trees of the same sort growing side by side, one has been killed and another unhurt. The most striking examples are amongst the Yews and Hollies.

Intense as the frost was in December, 1879, it has not been less so in January, 1881, but as the former was so destructive, the latter had less to do. Fortunately, the summer of 1880 was more favourable to vegetation than 1879, and consequently the ripening process was more complete.

It may be of some interest to append the readings of the thermometers during the period of the late low temperature, that they may be compared with the above:—

Date. 1881.	Max.	Min.	9 a.m.
January 13	29°	10°	26°
„ 14	23	—4	17
„ 15	23	—8	2
„ 16	17	—16	—6
„ 17	4	—12	—16
„ 18	25	10	2
„ 19	28	6	23
„ 20	25	—2	16
„ 21	25	2	6
„ 22	34	22	24
„ 23	35	—6	25
„ 24	29	10	9
„ 25	29	—8	12
„ 26	10	—11	—7
„ 27	30	18	18

On comparing these readings of the thermometers it will be found that the temperature of 1879 went three times below zero, as marked thus —, whereas in 1881 it has gone below zero eight times.

Woodside, Kelso. By FRANCIS DOUGLAS, M.D.

We have pretty well gauged the effects of last year's intense frost here—Laurels all killed to the ground; Acubas killed altogether; old Holly trees, over 80 years of age, either killed to the ground or having some vitality in the stems alone—whether they will survive another winter remains to be seen. Our Yews have suffered severely—some killed altogether, and others losing great branches and causing most unsightly prunings. Walnuts frosted for *ten or twelve feet*, and foliage now chiefly from old stems—recovery doubtful. Sweet Jasmine altogether killed. Yellow Jasmine uninjured, as are Mahonias, Cypressess, and Retinosporas. Rhododendrons and Azaleas also uninjured. Most of my herbaceous and alpine plants escaped injury, being protected by 8 or 9 inches of snow when the thermometer was 13° below zero. The Balsam Poplar usually has short foliage, but one here, in the latter part of the season, produced leaves nearly a foot long, by 5 or 6 inches broad.

October, 1880.

Notes on Effects of Frost of Winter, 1879-80, at Floors Gardens.

By Mr HENRY KNIGHT.

The past winter of 1879-80 was most disastrous to vegetation generally in this neighbourhood. In giving a short summary of the damage done, I may instance the almost entire destruction of the Portugal Laurels. These, in many cases, are entirely killed where the snow had been suspended by trees overhead, but where the snow had not been so suspended they are saved; the roots, at least, which during the past summer have made a fair amount of growth. Taking the Portugal Laurel as the evergreen plant that suffered most of any, the Holly may be named next in order. Out of a large number of old trees which had grown tall and lanky, it was found that few were worth leaving, they had got so much damage; they were therefore cut over at two feet or so from the ground, and now they are all making good growths, and will ultimately make good bushy plants. A singular fact in connection with the holly is, that it was found the variegated variety was not so much damaged as the green kind—that, in reality, the variegated was hardier than the green. The Yew suffered next in order; but some varieties were much hardier, such as the Irish Yew, than others, and little or no damage was done to them. Some trees that have a portion of their branches left will have still to be cut over in order that they may ultimately make some sort of uniform plant. A Yew hedge here, some 25 years old, was cruelly punished—some parts of it at least again showing the weakness of varieties as compared with others. This is a serious damage, as it forms an evergreen wall to a vegetable garden. The common Bay Laurel, by the acre, had to be cut over to the ground, and these are all making more or less strong growths again. Few of these evergreens were killed outright, being very much hardier than the Portugal variety, which is not to be wondered at seeing that in France the Portugal has been injured some seasons when the *Magnolia grandiflora* has been uninjured. Rhododendrons have proved the hardiest of all our evergreens on the whole, especially the hybrids of the North American and Caucasus species. Some varieties of *Ponticum*, and varieties in which the *arboreum* blood has been introduced have been killed. In future planting, therefore, preference should be given to the hybrids of the two first named species as they are quite as beautiful flowers. Boxwood was seriously damaged on low ground; indeed everything showed a weaker tendency on low hollows, and more especially on low water courses; the effects of the frost were distinctly traced on such places, and no doubt the glass would here have indicated some degrees more frost than where it was. As it was, we registered 10° below zero, or 42° of frost. Many other plants suffered very considerably, such as Roses, Coniferae, and brushwood of various kinds. Roses on conservative walls were killed to the ground, Standards were killed outright, and Dwarf Roses in beds were killed to the snow line, which is enough to point to a warning only to plant Dwarfs in future. Shrubs, such as Aucuba, Laurestinus, and Kalmia were bitten to the snow line also. Amongst the Conifers, the tenderest seem to be the *Cedrus Deodara* and the *Araucaria*, both of which are seriously damaged, but not killed as in some places; but this may be accounted for by the protection afforded by glass-houses close by. Oaks were seriously injured; one, two, and three year-old

woods were killed on many varieties, but as far as seen, none outright, though in many cases the bark of both Oak and other trees was split up somewhat similar to what was found on the Portugal Laurel and Holly. This will in a year or two be seen more fully, no doubt. Fruit trees suffered in a large degree, for the frost came on us when the trees were in full leaf and full of sap. Many Apricot and Apple trees were killed outright, minus the stock, or otherwise so damaged that renewal is found necessary in many cases; as in some varieties four year old wood was killed, and the older branches so split that they had to be cut out entirely. Some varieties of the common Ivy were also killed, and in all cases the leaves were killed as well as the current year's growth.

November 29th, 1880.

Floors and Bowmont Forest. By MR SAMUEL REID.

The Oak trees at Floors some two, and others of three years growth were cut off; Spanish Chestnuts in the nursery were cut to the ground; *Cedrus Deodara* was very much cut up; also in young Wellingtonia the leaders were all cut off. Of Yew trees, where much exposed the tops died off. Hollies were all cut back. In shrubs, Bay Laurels, Portugal Laurels, and Laurestinus, were all cut to the ground. *Aucuba* was treated similarly.

Mahonia and Rhododendrons are the two shrubs not injured by the frost. At Floors, trees that have escaped are Ash, Beech, Birch, Horse Chestnut, Elm, Wych, and English, Laburnum, Lime, Sycamore, Poplars, Larch, Scotch Fir, and Spruce. *Abies Douglasi*, Silver Fir, *Picea nobilis*, *P. Nordmanniana*, *Pinus Austriaca*, *P. Cembra*, *P. Laricio*, *Thujaopsis Borealis*, and *Cupressus Lawsoniana*, have all escaped without injury. The lowest temperature at Floors was 13° below zero. At Bowmont Forest the damage is very light. The trees are mostly Larch, Scotch Fir, and Spruce, which stood the frost without injury. There are a few Oaks which were not in the least affected. Shrubs that were cut to the ground at Floors, were not damaged here. Green Hollies, *Aucuba Japonica*, and Bay Laurels were not injured; but it is quite a change when you get down to the Kale-banks, just below Caverton Mill. In that quarter there are a good many Oaks that are quite dead, a great deal worse than they were at Floors; where nearest to the water, most damage has been done. I have no account of the temperature at Bowmont Forest.

24th Nov., 1880.

Ormiston House. By WILLIAM B. BOYD, ESQ.

The winter of 1879 and 1880 was one of the most severe within my recollection. The storm commenced on the 1st Dec., with a fall of snow 8½ inches deep, with the thermometer shewing 12° of frost, which increased in intensity till the morning of the 4th Dec., when the thermometer at daybreak shewed 50° of frost, or 18° below zero. My thermometer was quite unprotected, and only 2½ feet from the ground. The damage done to trees and shrubs was great, and would have been more so had we not had a good covering of snow. All the Oak trees growing below an elevation of 60 feet above

the river Teviot, had all the leading shoots killed, and seemed otherwise quite dead; most of them, however, in about two months after the usual time of sprouting, made young leaves from the main trunk and some from the branches, and others again have made no leaves at all. Those trees which sprouted again have made unusually large leaves (nearly double the ordinary size), and the danger will be that with another severe winter on the unripened wood the trees will be killed entirely. Many other trees suffered as well as the Oaks, viz.—Spanish Chestnut, Planes, Elms, and Ashes; in these many of the branches and last year's woods are dead, and the trees will be long before they assume their original shape, if ever they do so.

Shrubs also suffered severely, the following were all killed to the ground Yews, Hollies, Box, *Cupressus Lawsoni*, *Picea Pinsapo*, *Araucaria imbricata*, Portugal and common Laurels, *Jasminum nudiflorum*, *Wistaria Sinensis*, many old apple trees. Peach trees on the wall and Apricots, Schumac, Privet, Laburnum, both Scotch and common, and all the Roses, *Pernettya mucronata* and all the Escallonias, besides many others. My house here is covered with a great variety of Climbing plants, and the only three that were not killed down or damaged were *Atragene Austriaca*, *Prunus Sinensis*, fl. pl., and *Acer negundo variegata*. From Kelso all the way to Mounteviot up to an elevation of 60 feet above the river Teviot, the Oaks and Spanish Chestnuts are affected in the way I have mentioned. Herbaceous and Alpine plants were nothing the worse, having such a good covering of snow, in fact some plants such as the Libertias, Francoas, and Montbretias which unusually require protection were quite unhurt in the open border.

Oct. 27th, 1880.

Jedburgh. By Mr JOHN HILSON.

The destruction of trees and shrubs by the dreadful severity of the frost of Dec. 4th, 1879, is unexampled in this district. Gentlemen's grounds are full of gaps from the havoc committed. Yews, Elms, Young Oaks, Rhododendra, Laurels, Ivies, and Hollies, all have suffered a fatal blight. The work of death was gradual, for it was far into spring, and some extent into summer, before vitality shewed itself as hopeless in the trees. Nothing like it hereabouts is remembered. All agree that it was the above date which witnessed the blow. People unite in saying that it exceeded in severity anything ever felt in the valleys of the south of Scotland. I was at Torquay at the time, and there the cold was intense, a dry skin-flaying rigour of climate which the Channel air did nothing to mollify. A friend in Kelso tells me that in that town the frost was so arctic in keenness that if you grasped an iron handle of a pump, the skin of the hand would be left attached. The rest of the winter here was not so severe, and when New Year was past it became milder than we had it in Devonshire.

Sept. 2nd, 1880.

Mounteviot. By Mr JOHN PAGE.

I have looked up the weather account, as kept at the gardens here, for the the year 1879, showing the height above the sea level, number of wet days,

amount of rain, the greatest heat and severest frost, height of the thermometer above ground, with list of plants and trees killed to the ground or severely damaged.

The height of Jedburgh Market Place is 269 feet above sea level, and the gardens here are about the same.

100 parts to an inch.			
Wet days.	Days.	Total for each month.	
January ..	3 ..	·27 10ths of an inch.	
February ..	12 ..	1·14	„
March ..	14 ..	1·46	„
April ..	7 ..	·76	„
May ..	10 ..	1·10	„
June ..	17 ..	2·98	„
July ..	13 ..	3·43	„
August ..	18 ..	2·14	„
September ..	8 ..	·92	„
October ..	7 ..	·83	„
November ..	5 ..	·97	„
December ..	— ..	— 5 inches snow.	

Rain 114 days. 14 inches.

August had most wet days: July had the greatest fall of rain. The greatest fall of rain in one day during the year was on July 15th, when ·84 fell.

The greatest heat, August 11th, was 75°

„ „ 12th, „ 73

„ „ 14th, „ 70

„ Sept. 6th, „ 70

These are the only four days when the thermometer reached 70° and upwards.

The severest frost occurred on Wednesday, 3rd, and Thursday, 4th, Dec., 1879. Thermometer, as noted in my pocket book, commencing on the 3rd at 8 a.m. :—

8 a.m. 33° frost, 1 below zero.	2 p.m. 12° frost.
12 noon 23 „	4 p.m. 24 „
2 p.m. 12 „	9 p.m. 26 „ 6° above zero.
4 p.m. 32 „ at zero.	5th.
9 p.m. 38 „ 6° below zero.	8 a.m. 33 „ 1° below zero.
4th.	4 p.m. 29 „
8 a.m. 45 „ 13° below zero.	6th.
10 a.m. 30 „ 2° above zero.	8 a.m. 27 „
12 a.m. 22 „	4 p.m. 24 „

This frost commenced on November 23rd, and continued every night up to December 13th; it then broke for two nights, 14th and 15th, when the thermometer stood at minimum, 35° and 39° respectively, being 3° and 7° above freezing point. The thermometers stood above ground 2 feet 6 inches, and were exposed, except for a small ledge of wood above them. Thermometers (registering ones) made by Adie & Son, Edinburgh.

List of Trees and Shrubs killed and disabled :—

Oaks, 1 and 2.	Rhododendrons ponticums and hybrids, some fine old bunches, 1 and 2.
Yews, 1 and 2.	Aucubas, 1.
Tree Box, 1.	Cotoneaster macrophylla, 1 and 2.
Hollies, all kinds, 1.	Cratægus Pyracantha, 1.
Ivies of sorts, 1 and 2.	Cydonia Japonica, 1 and 2.
Laurels—Portugal, Bays, and Sweet Bays, 1.	Gum Cistus, 1.
Chestnuts, sweet, 1 and 2.	Garrya elliptica, 1.
Magnolias, 2.	Forsythia Fortunæi, 1.
Figs, 1.	Privet, common, 1 and 2.
Roses, old varieties on walls, 1.	Paulownia imperialis, 1.
Clematis, on walls, 1 and 2.	Olea ilicifolia, 1.
Escallonia macrantha, 1.	Raphiolepis ovata, 1.
Berberis Darwinii, 1.	Ribes sanguineum, 1 and 2.
Buddlea globosa, 1.	Santolina, 1.
Yellow Broom, 1.	Spanish Broom, 1.
Whin or Furze, 1.	Viburnum tinus, 1.
Deodaras, 1 and 2.	Akebia quinata, 1.
Wellingtonias, 1 and 2.	Yucca recurvifolia, 1 and 2.
Araucaria (three stood unscathed on Penilheugh), 1 and 2.	Yucca gloriosa, 1 and 2.
Pampas Grass, 1.	Rose Acacia, 1.
Arundo conspicua, 1.	Walnuts, 2.
Tritomas much weakened, although covered.	Retinospora Ericoides, 1 and 2.
	Picea Pinsapo, 2.
	Apples, 1 and 2.
	Pears, 1 and 2.

Note.—1 means killed, and 2 severely injured. A dot in front of the names means they were covered with hay, straw, or mats.

Owing to a coating of snow at the time all Herbaceous plants were safe. The Temperature was low all that summer only rising to 75°, and that for one day only, and only reaching 70° four times during the summer. I have only given the number of days on which rain fell. There were also a great many dull days, that is days wanting sun but no rain fell.

Altogether it was a wet, dull, and sunless summer, with a very low temperature. All Tender Annuals perished in the flower garden after being raised in heat, and hardened off, such as Zinnias, Salpiglossises, Mesembryanthemums and a host of such things. In the kitchen garden, French Beans would not grow, nor Vegetable Marrows unless under glass; Tomatoes on walls would not grow. Peas were one month later in filling in early summer. Fruits would not ripen. Strawberries were quite insipid. Owing to the death of shrubs, &c., the appearance of the flower garden is quite altered—the frame, as it were, having been taken from the picture.

Among the plants that stood the severity of the winter untouched were Mahonias; and without any protection, Thujopsis dolabrata, Ampelopsis Veitchii on walls, Aristolochia Sipho, Wistaria Sinensis, Weigelia rosea.

The summer of 1880 was fine; but owing to the Oaks having to break out of old wood, which caused them to be much later, and consequently to be in

an unripe state, I am very much afraid that that unprecedented frost in October, 1880, when the thermometer went 3° below zero will finish what the year 1879 began. If so, Oaks in the flower garden here, which I have no doubt are 200 years old, will all perish.

January 13th, 1881.

Minto House Gardens. By Mr JOHN GALLOWAY.

1878-9.—I am sorry I can give you no reliable information, as regards the damage done on the banks of the river Teviot upwards, but it evidently must have been great owing to the amount of *débris* that came down the morning following the memorable night of the 28th December last. The storm commenced on the 1st December, 1878, and broke up on the 5th February, 1879, except three fresh days we had on the 12th, 13th, and 14th, of January, 1878.

The thermometer fell as low as 30° of frost during that time.

The damage done to plants and shrubs was very trifling, except that I lost some Pampas grass, and a few *Tritomas*.

1879-80.—Frost set in again on the 28th of November following, with 10° of black frost for three nights running, and 3 inches of snow on the day following.

December 1st, 11° of frost, 2nd 27°, 3rd, 4° below zero, and on the morning of the 4th was the lowest that was registered here, 8° below zero; on the 5th at zero, 6th, 17°, 7th, 15°, 8th, 24°, 9th, 23°, 10th, 12°, 11th, 17°. 12th, 17°. The thermometer was standing exposed 4 feet above ground.

We had fresh weather from the 5th to the 9th January, and the storm broke up on 28th January, 1880.

The damage sustained by trees and shrubs, owing to the last severe winter I have mentioned, was almost exclusively confined to Laurestinuses, Euonymuses, Acacias, Jasmines, *Garrya elliptica* and Cotoneaster; all those I have mentioned are on Minto House, and under the shelter of a balcony, and are all more or less injured by frost. Laurestinuses were frozen to the ground, but are all coming away from the root.

HOLLIES, PORTUGAL LAURELS, AND LAUREL-BAYS.—Those that were well exposed to the light, were only partially destroyed, but those that were under the shelter of trees in lower ground were all frosted, but are coming away from the root. Of two of *Thuja gigantea*, not over 20 yards apart, one is almost frosted to the ground, the other is scorched the same as if it had been done by fire.

PEACHES, PEAR, APPLE and APRICOT TREES.—The frost struck the trees while their leaves were quite green. It froze them through and fixed them on. The withered leaves shrivelled as if fire had at once scorched and fixed them. This gave the trees a ghastly death-like appearance. Some of the green wood shared a fate similar to that of the leaves and was severely bruised and discoloured. The branches have all the appearance of the cold having hit them a violent blow, or as if they had been held vice-like in the cold crushing gripe of the frost.

But now October 1st, I am pleased to say that all the trees are in a duly healthy condition, and I have gathered a nice crop of fruit off them all except

Apple and Pear trees. Out of a collection of 400 dwarf Roses, I did not loss one. Of Standards, I nearly lost all.

The only Forest tree that was spoiled by frost, was the Elm, which was split.

The Estates of Wells and Cavers suffered rather more by the severe frost of 1879-80, than has been experienced at Minto.

Oct., 1880.

SELKIRKSHIRE.

On the Effects of the Winter, 1879-80, on Gardens, Shrubberies, &c., in Selkirkshire. By the Rev. JAMES FARQUHARSON, M.A., Selkirk.

The winter of 1879-80 differed in several respects from that of 1878-79. The cold, while it lasted, was much more intense; but it passed away quickly. While the six months' winter of 1878-79 was characterised by a uniformly low temperature, scarce relieved by any milder interval, that of 1879-80 was notable for a sudden dip into intense cold at the beginning of the season. The thermometer in many places fell below zero in the beginning of December; but after that "cold snap" the winter months were comparatively mild. The difference between the two seasons will be seen by a glance at the average thermometrical readings for the various months, which have been obligingly furnished to me by Mr Mathison, from the Meteorological Society's Station at Bowhill.

1878-79.	Max.	Min.	1879-80	Max.	Min.
October	53·19	43·26	October.	53·22	35·70
November	41·10	32·60	November	45·50	33·27
December	34·09	25·32	December	39·40	26·25
January	34·25	23·58	January	37·27	28·16
February	36·96	28·57	February	45·22	35·00
March	42·30	31·23	March	49·90	30·29
April	47·10	33·80	April	52·00	35·14

In 1879-80 the lowest readings were—in November, 2nd, 23°, 14th, 21° 15th, 22°; in Dec., 2nd, 19°, 3rd, 8°, 4th, 3°; in Jan., 14th and 19th, 19°, 20th, 15°; in Feb., 9th, 27°; in March, 19th, 22°; and in April, 30th, 25°.

It will be observed that the thermometer reached its minimum at Bowhill on Dec. 4th, 1879, when it stood at 3°. Bowhill, however, stands at some height above the river, and is much sheltered by wood; and at several more exposed places down the valley of the Ettrick, and on a level with the river, the readings on the same day were considerably below zero. But keen as the frost was, it was not so intense in this upland district as that reported from the lower reaches of the Tweed; and its influence on vegetation, although sufficiently destructive, was not so disastrous as in many low-lying districts along the Borders. It is evident also from the reports about to be referred to that the injurious effects of the cold diminished as the elevation increased, and were less marked at Ettrick Manse near the head of the valley than in this Parish at its lower end.

In estimating the influence of the winter in question on vegetation, it must also be borne in mind that the preceding summer (1879) had been exception-

ally cold and wet. The young wood of shrubs and trees had, in consequence, to encounter the blighting frost in an unripened state, and suffered much more than would have been the case after a summer of average character.

I have endeavoured to make the inquiry as to Selkirkshire more complete than in the note furnished for the Proceedings last year, and have been favoured with short reports, bearing on the state of matters in their respective neighbourhoods, from Lord Napier and Ettrick, Thirlestane Castle; the Rev. Dr Russell, Yarrow Manse; J. W. Dennistoun, Esq., the Hangingshaw; the Rev. Mr Falconer, Ettrick Manse; and Mr James Mathison, Bowhill.

Selkirk (500 to 600 feet above the sea), Bowhill (592), and Hangingshaw (600), all in the lower part of our two valleys, elevated considerably above the rivers, and surrounded with wood, may be regarded as subject nearly to the same weather conditions. Yarrow Manse (660) is nine miles above Selkirk, and on the banks of the river, without sheltering wood; while Thirlestane Castle (woods ranging from 750 to 950), and Ettrick Manse (780) are respectively $17\frac{1}{2}$ and 19 miles above Selkirk, the former surrounded by thick plantations, the latter more exposed. There is thus considerable variety, both of elevation and exposure, in the places embraced in this report. My queries were the same to each correspondent, and the results may be summarised as follows.

1. FOREST TREES.—Uninjured throughout the county.

2. SHRUBS AND SHRUBBY TREES.—At Selkirk Manse, none killed, although the whole young wood, the growth of 1879, was destroyed. Some of the larger and older hollies at Bowhill and Hangingshaw killed. Mr Dennistoun remarks that those “which suffered most had an immense crop of berries last year” (1879). *Common Bay* and *Portugal Laurels*; at Selkirk and Hangingshaw, much injured, some killed. At Bowhill, suffered little. *Yew*: tips of more exposed branches browned: none killed. *Laurestinus*, *Aucuba*, *Escallonia*, *Berberis Darwinii*: killed. With these exceptions shrubs generally withstood the frost. The *Deodars* on Howebottom, much exposed, escaped unscathed.

At Yarrow, Thirlestane, and Ettrick, no injury was done to *Holly*, or *Yew*; and *Laurels* were not much more injured than by an ordinary winter. Dr Russell writes “The holly shrubs, and hedges at Yarrow Manse, though near and almost on a level with the river, were not in the least injured by the frost.” Contrast this with the vigorous holly hedge at Roxburgh Manse (200 feet above the sea) cut down to the ground.

In all parts of the country *Rhododendrons*, both *Ponticum* and *Hybrid*, stood the winter well; but the flower-buds were killed, so that *Rhododendron* blossom was a rarity in 1880.

3. WHIN AND BROOM.—In the lower districts greatly injured; a large proportion of the bushes killed. Less hurt in the upper part of the country. Dr. Russell and Mr Falconer report the Broom unusually rich in blossom in the summer of 1880.

4. GARDEN VEGETABLES.—*Brocoli*, *Brussels Sprouts*, *Winter Cabbage*, &c., suffered a good deal, but were not wholly destroyed as in the previous winter. In the Manse Garden here there was an excellent crop of these vegetables in spring; and in almost all varieties of Garden Vegetables grown by me the

season of 1880 was, I think, the most productive I have known for twenty years. In the district generally, there was a good supply of vegetables. Fortunately, in December, 1879, snow lay deep on the ground during the prevalence of the severe frost, and protected the humbler growths of the garden.

5. FRUIT TREES.—*Apples, Pears, and Plums*, a failure. Small fruit, a fair or abundant crop in all the gardens reported on, except in Ettrick, where Lord Napier and Mr Falconer speak of a deficiency in *Black Currants*, a fruit which ordinarily grows there in great perfection.

6. FLOWERING TREES.—Owing probably more to the unripened state of their young wood than to the severity of the frost, these seem to have suffered severely. All the reports except one speak of scanty blossom on *Horse Chestnut, Laburnum*, &c., in the summer of 1880. The *Hawthorn*, indeed, may be said not to have blossomed at all. Such hardy natives as the *Hazel* and the *Sloe* produced no fruit. The only exception to the somewhat dismal tale comes from Ettrick, Mr Falconer reporting, "*Manse Chestnuts* were most luxuriant in flower."

This last remark recalls the observation already made as to the decrease of injury in proportion to the increase of elevation. The reports from Yarrow, Thirlestane, and Ettrick testify to less injury from the December frost than was experienced in this lower region of the county; and I have no doubt the whole county will compare favourably with what is recorded of less hilly districts nearer the sea level. Unfortunately I have been unable to obtain an accurate record of the temperature in Ettrick. My informants say they do believe the thermometer was lower than 5° below zero on the coldest night.

Frost of 1879 at Ashiesteel. By MISS RUSSELL.

The severe frost of November or December, 1879, at Ashiesteel, as in other places, did most mischief among large old shrubs, &c. The way in which young shoots escaped is surprising. Although the greater part of the more modern *Roses* had to be cut down nearly to the ground, a *Gloire de Dijon*, which had been so cut down a year before on account of the wood being old and not growing, had three or more strong green shoots of which even the leaves were not frosted.

(It may be remarked that if the frost did not cut down *Tea Roses* so often as it does, they would have to be cut down otherwise; for their strong growths, like those of the *Briar*, begin to go back after a few seasons. In fact, being felled occasionally is nearly the only pruning a strong-growing *Tea Rose* should have).

A young *Apricot*, which was not thriving, was killed dead on a south wall. Another, and two *Peach Trees*, on the same wall little hurt. The *Chimonanthus fragrans* had the shoots blackened at the ends. Of several shrubby *Althæas*—shrubby *Mallows* or hardy *Hibiscuses*—which had been lately planted, three survived the winter without being cut over, but two were late of coming into leaf, and it is doubtful how they and some other things may stand the ensuing winter, for the shoots could not be ripened. This shrub

does very well on walls about Edinburgh. A shrubby *Hypericum* is now growing strongly from the root.

Two young plants of *Spiræa Lindleyana*, planted among grass, coming up from the roots. The *Spiræa ariaefolia* is perfectly hardy, also an old-fashioned pink *Spiræa* still remaining as a hedge where there was an old vegetable garden in the east end of the haugh. This last is a valuable shrub for damp ground. The White Broom much injured, if not killed. Portugal Laurels, some of which were going back from other frosts, or merely from age, are very much injured. A very large old one, of which the original stem must be something like four feet round, and which has long had dead wood about it, is not so leafless as the others, from being sheltered. Some young *Rhododendrons* near the lower lodge are quite or nearly killed, though of the early crimson class; some of different kinds near the upper lodge are not touched.

The only things to be much regretted are the injury to two very large *Hollies* near the house, which have been all but killed, and are much disfigured. They have been in the habit of bearing enormous crops of red and yellow berries respectively; whether this was the cause or the indication of a weakened state. None of the *Hollies* without berries seem to have been frosted at all. And that done to the old fruit-trees on the lawn, of which the Pear-tree and one of the Apples look half dead; they were much covered with lichen, and were certainly very old; but it is difficult to believe they have been really killed by frost. The sweet-scented garden *Clematis flammula* is dead in several places; the *C. Vitalba*, or Traveller's Joy, not injured; this latter is supposed to be a native of England. A young plant of a hardy American *Magnolia*, on a wall, is perfectly uninjured. The *Fuchsia Riccartoni* is in all respects a hardy perennial at Ashiesteel, dying down each season. The height of Ashiesteel, from 450 to 500 feet above the sea.

October, 1880.

Motto of a Silver Coin of the Emperor Charles V., found at Kelso. By JAMES HARDY.

IN Vol. VIII. of the Club's "Proceedings," p. 548, is a notice of a Spanish silver coin of the age of Charles V., and his mother Joanna, found at Kelso in 1879. The central device on the reverse consisted of two crowned pillars placed amidst the waves of the sea, but two of the letters of the legend being rubbed could not be accurately deciphered. The true reading is PLVS VLTR. The two pillars represent the Pillars of Hercules, the utmost gateway of the world, according to the ancient acceptance. The original phrase was NE PLVS VLTRA, "No more beyond," but when Columbus had revealed a new continent, the two graven pillars looking out upon the deep were still retained, but a word was struck out of the motto, which then became PLVS VLTRA, "More beyond."

Scraps relating to Natural History in North Northumberland. By CHARLES MURRAY ADAMSON, Esq., Newcastle.

COLIAS EDUSA.—Being more interested in Birds than Insects, I will merely make some remarks about Butterflies, and be done with the subject. In 1877, we were as usual at Holy Island in August and September. The Butterflies we met with were, first in importance, *Colias Edusa*, the others the Meadow Brown, Common Blue, Tortoise-shell, Painted Lady, the Small White, and the Grayling. With respect to the last, being not so well up in the subject as I ought to have been, I thought it was the Wall; but having brought one home, Mr. Hancock on seeing it pronounced it the Grayling. This shows how cautious one should be in positively stating a circumstance, and consequently how often mistakes arise and occur in writing about species met with. About *Colias Edusa*, which was not uncommon in some places that year, I and one of my children saw one in our own garden at North Jesmond on the 17th June, 1877, the first we ever saw on the wing. On the 29th August, at Holy Island, we saw one. At the time we saw it, Ethel and I were looking for a Green Sandpiper. I tried to catch the butterfly, she taking hold of my gun, and lending me her hat, mine being a very soft one, but I failed to do so, it flew so quickly when chased. It was within a yard of me twice, when it settled on a Hawkweed flower, nearly the colour of itself, on the side of a sand hill. On September 3rd we also saw another, and on the 11th, two were caught and two others seen by my elder son, who has since sent me a large collection of butterflies from the Karen Hills and other parts of Burmah. On the 16th, a sunny day, but with a cold N.W. wind, twelve were caught, and on that day they were actually common. Of those caught, nine were males and three females. I copy from my notes:—"They were very difficult to run down. The first was caught after a very long chase; but afterwards, by allowing them to settle, which they often did on the Hawkweed and Lady's Finger, they were more easily captured. Mary caught by far the greatest number. We had neither nets nor boxes, but we found amongst us two pins on which we stuck the butterflies sideways, and in this manner they received very little damage." On the 17th, on another part of the Island, one was seen, but there might have been plenty of them, as we did not look for them. On the 18th, one was caught by Mary; and, on the 26th, one was caught

on the Heugh, and others were seen flying along the road as we were leaving the Island to come home. Now, from the numbers there were that year, any one would naturally expect the insect would firmly establish itself, and that in future years it would be met with; but such has evidently not been the case, as I have not seen or heard of one since. What is the cause? Perhaps some persons might say we caught them all. Such a notion is absurd, as it was no easy matter to catch them, for they fly very fast when going with the wind, as they seem always to do, and running amongst the sand hills is pretty hard work. Sometimes one had to be chased a great distance before being run down, and many that were run after escaped easily. One singular circumstance with respect to the genus "*Colias*" is that a species closely allied to *Edusa*, inhabits Lapland and another Greenland, showing that temperature does not affect them; and, if this is so, why is *Edusa* so erratic in its habits? How can these irregularities of occurrence be accounted for? Probably one insect-eating bird, or a mouse, would destroy at a meal more than an entomologist would in a season.

Before noticing anything about individual species of Birds, I will say something of Holy Island, and the Slakes about it, which are undoubtedly great resting places at the different seasons for many species passing on migration, as well as feeding places for some species during winter. Sometimes for days you may wander over the Slakes without getting a shot at any bird worth shooting at either for food or from which to get instruction, the greater portion of the ground on which the birds congregate being so flat and without a vestige of shelter, they cannot be approached. Following them under these circumstances tries any one but a naturalist, and often tries even his patience. It is no place generally for ordinary sportsmen whose only wish is to get many shots and fill a large bag; but, at the same time, I may add it takes about as much skill and patience to stalk a Curlew as it probably often does to kill a stag. The persons who can take delight in such a place are those, and they only who know what birds to look for, and who can understand the tactics requisite to get near what they are looking for when they come across them.

The naturalist looking for rare birds generally likes to be alone, or with one friend on whom he can rely, so as to be able to drive birds if necessary, and who understands as well as himself about

approaching the birds, taking into consideration the state of the wind and tide and other circumstances. One who shoots at whatever comes in his way, useful and useless, is no company for him.

I have a kind of affection for the place, as on it I have spent so much time pleasantly, and have also derived so much, to me, most interesting information from those of its productions I have been so fortunate as to meet with in my frequent rambles. I may state that I cannot be too thankful for all my life having taken great interest in Nature's works: the study of these, at any rate, seems to harmlessly occupy one's spare time, which unfortunately, unless one has similar tastes, is too frequently very ill spent; and I here add my sincere thanks to Mr Crossman, the lord of the manor, for his kindness in having given me permission to follow my pursuits during the last few years over his lands—an indulgence, I believe, not usually given, as he has a great dislike to all kinds of birds being persecuted and destroyed.

RICHARDSON'S ARCTIC GULL.—Birds of the year, as well as mature birds, in about equal numbers, arrive on the coast and are about Holy Island from the third week in August, and the species seems to keep passing for about a month. The numbers coming seem regulated by the quantity of Terns they meet with, on whose industry they rely. I have observed them for many years at this time. I once shot one feeding on the refuse from the fishing boats on the shore in the harbour. I think these birds acquire their mature plumage in the autumn of the next year after they are hatched, as I shot one as it flew over the sand hills in August, 1878, a very interesting and pretty bird. Although it has many of the barred feathers (those first acquired) remaining, it is a very light coloured bird, being white from the chin to the tail, excepting the few barred feathers which remain. It is the only bird in a similar state of plumage I have seen. During a heavy squall with rain in the end of August, I could not help admiring the flight of this Gull as it chased some Terns. It was blowing so hard, and the rain was so heavy, I was glad to take shelter within the look-out on the Heugh, and just peep over to watch some friends coming over from the Law in a boat. One would have thought it a time for even this bird to take shelter. Not so, however; he was as importunate for food as if it was a fine day; the wind and rain apparently had not the least effect on his buoyant flight, and he seemed to be playing with the gale, turning sideways to it with the greatest ease, and turning with

apparently the least exertion to himself, till he had obliged the Terns to give up their food, when he as usual left them to go in search for more or go without, he not caring so long as he got what he required from them. Some years they are much less common than others. In 1876, I only saw one fly near us when we were in a boat going to draw fishing lines, which flew towards the boat; and it was pretty to see it as it examined a bladder floating to show where a line was. It seemed not to understand it, looking attentively at it, and turning its head sideways, so as to see it more distinctly as it passed fearlessly on. During the last days of August, 1880, we walked from Holy Island to Bamborough, when we saw many of these birds flying along the coast backwards and forwards, and occasionally chasing the Terns as usual. None seemed to settle on the water, but it was amusing to see them in pursuit of the Terns; in fact it reminded me of hawking with trained hawks, as they seemed to act in concert, or of coursing a hare with a couple of greyhounds. Many times they hunted in couples, two singling out a Tern from a flock, probably the one which had the prize sought for; but I could not give an opinion whether the two Gulls acted in concert—one to help the other—or that they bullied the Tern each on his own account, but between the two the poor Tern had apparently no chance till he had given up the coveted morsel, when it was left alone. Can any one tell us why this bird does not accompany the Terns on its northern migration in spring? I never knew one having been procured at that season.

STORM PETREL.—On the 10th Sept., 1876, the Storm Petrel in my collection was found dead by my daughter Mary on Goswick Sands. It had been washed up by the tide, and was as wet as it could be and mixed with sand. It looked like a House Martin, from the white mark on its back; but so soon as I saw what it was I took it to the land, and in the first fresh water I found I washed it thoroughly, and let it dry in the wind as we went home. By the time we got there it was perfectly dry and as clean as ever it was. It was moulting some of its body feathers, was lean, but the cause of its death I know not. Who knows any thing about these birds' migrations, I wonder?

COMMON GODWIT.—During the latter part of the month of August, in 1880, in my rambles on the slakes, I saw, as is usual at this time of the year, some large flocks of these birds which were unapproachable. I picked up several red feathers, and also

some dark tail feathers of the mature birds, cast during the regular autumnal moult from summer to winter plumage; this proved some old birds were about this year at any rate. I may add there was at the time a continuance of south-easterly winds, which may have detained these old birds on their migration this year. A friend of mine went out with a small gun in his punt, and he shot several young birds; the next day I accompanied him as a spectator to see if I could observe any red birds, but the shore is so wonderfully flat there are few places you can take even a punt near where such birds ordinarily frequent, and although we saw some Godwits in the distance, only two young birds came within shot, flying over the punt. Being very anxious to meet with a bird in its red plumage, and being satisfied some were about by the feathers I had found, on the 30th August I called at the watcher's house and told him I was going to try to shoot a red Godwit. I then walked to the Sandriggs, which are very far out, about high tide, and the tides being poor there was little danger of my being overtaken. I saw many large flocks which flew out of sight. One flock of about twenty birds I saw coming towards me, and I lay flat down on the sand. I shot at the flock, which came high, from the north to the west of me, with a now old-fashioned Eley's wire green cartridge No. 3 shot. One bird came flop down dead, another came sloping down, and on its reaching the ground it immediately tried to rise again, when I saw it was winged. I considered it my bird. It ran like a greyhound, I after it, but it had the advantage of one hundred yards start. It ran towards a deep gut running north; I stopped and shot at it, as I saw if it took to the water the wind and tide would take it away, and I should lose it, but being out of breath, and the bird being at a great distance, I could not stop it, and it took to the water like a little duck. When I got to the water's edge I could easily have killed it, but I at once saw if I killed it any further attempt to get it was hopeless, as a strong S.E. wind was blowing, which made the water rough, and I could not see its depth, the tide running out fast, and it was a place where there are dangerous quicksands, and I was obliged to give it up as a lost bird. On seeing how matters were, I left it to look after the other one, and to my delight, on picking it up, I saw its breast was red. He came down with such a flop his beak was broken by the fall. Well, I wrapped him up carefully and put him safely in my bag. Having done this, I retraced my steps to see if I could now

see anything of my other friend, or, as he would probably consider me, his enemy; as the water was rough, I thought if he could, on my departure, he would come ashore; but I could see nothing of it, though I searched attentively, and I concluded it must have been carried out to sea. However, as I could not cross the gut where I was, I went to the ford at some distance further south, and came back on the opposite side of the gut, all the way looking for it in case it had got across. By the time I got to the other side the tide had run out considerably, and the shore was stony, and if it had got there and had crouched on my getting near it, I could not have seen it, the extent of shore being now so great, and therefore I was obliged to wend my way back without it. However I was content with the one I had, and on passing the watcher's house I had the satisfaction of showing him the bird I in the morning told him I was going to try to get. Though I was almost certain the other bird had been carried out to sea by the wind and tide, I followed the same route next day, but saw no Godwits. The following day also I went the same journey, still thinking I might find the bird if it had come ashore. I followed the high water mark, thinking it would, if alive, be driven up by the rising tide. After a long search, on returning to the island, but at a distance from where the bird was shot, I saw a bird running at the edge of the water quite out of shot, which attempted to rise from the shallow water, but fell again into it. I now saw the bird was mine, as the water was quite shallow and the wind was blowing strong on shore. It again took the water, but I was quickly within shot of it and got it easily, as so soon as it was killed the wind brought it ashore. Now as to the birds and their states of plumage. The first is in a curious state. Both have moulted considerably towards their winter plumage. I think both are males, but the paler bird I could not make out the sex of, as it was much injured by the shot, and was hit in the back; but it is strange there should be so much difference in their style of moulting. The dark bird would seem to have commenced to moult previous to its having lost its summer condition, as all the renewed back feathers and scapulars much resemble the bird's spotted summer plumage, and the feathers renewed on the breast amongst the red feathers have all come bright buff (they looked when the bird was first killed almost orange colour), but I have little hesitation in saying that before this bird had completed its moult all these renewed

feathers would have assimilated with its pale winter plumage, the bird's summer condition having entirely left it before that time. All the summer tertials are cast, and those renewed are plain, as are all the wing coverts, which are all new feathers, and which have no spots on them. It is quite clear that this bird had been moulting its back feathers for a length of time, as most of the renewed feathers had come like those of summer, but were not in the least worn, and evidently had been replaced since the bird acquired its breeding plumage in spring. On the breast it had a few white feathers much worn, which showed conspicuously amongst the red plumage acquired in spring, and also amongst the buff feathers now coming; these I think undoubtedly were feathers the bird had acquired early the preceding autumn, and having lost their vitality before the bird acquired its summer condition, they remained white all through the summer. They would undoubtedly have been shortly cast, and if the bird had entirely lost its summer condition, which it most probably would have done, before those feathers which would replace them had come, the new feathers would again come white. If they were cast previous to the bird's having entirely lost its summer condition they would begin to come buff, but probably would be white before they acquired the full size. This bird has not yet cast its top tail feathers, they being dark feathers of the mature bird which it got last autumn, but two light reddish-coloured spots or bars appear on these feathers evidently having changed colour during the summer by fading to a certain extent, and the faded part forming the bar or spot having acquired the red tint of summer, I think, showing conclusively that the feathers some months after having come to the full size do change colour, as these mature birds only cast their tail feathers in autumn and when those renewed show no trace of red. Some new tail feathers are coming with the usual plain dark outside edge of the tail of the mature bird, which it always gets on moulting. The other bird had nearly lost its summer plumage, but the winter plumage acquired by it is quite pale as in ordinary cases. Evidently this bird had lost its summer condition previous to commencing to moult, but why the two birds differ so much in appearance I cannot explain further. In this bird the tail is changed and is plain, and all the renewed feathers on the back, breast, and wing coverts are those of the ordinary winter plumage, *i.e.*, plain, and without spots. In both birds the wings are in similar condition,

the primaries in each up to about the third from the end being cast and renewed, those next the three outside in both being short, and the three outside still remaining to be changed. The two Godwits were the only birds I shot in three days, but I was amply satisfied with them. It is possible the paler bird may be a female, but the red feathers on the breast remaining uncast are entirely red, and not like the plumage we see the females in before departing to breed in April and May. I may add, these birds I think help to prove my theory, which is that the colour of the feathers acquired when the individual bird moults, or its feathers other ways change colour, entirely depends on the condition of the individual at the time it acquires the new feathers, or the change in colour of its feathers takes place; this condition altering ordinarily, first when the bird begins to acquire its winter plumage from the young or first plumage it ever had, and also when it acquires its summer plumage from the winter plumage, and which would be the final change, except annual seasonal changes in those kinds which acquire their breeding plumage the spring after being hatched. In those kinds of birds which do not acquire their breeding or summer plumage the spring after they are hatched for want of their required age, the condition to make the feathers come in summer plumage is not acquired, and the consequence is some of these kinds of birds merely acquire a winter plumage the following year, or it may be a similar plumage for a year or two more, till the bird, according to its genus, or species, arrives at sufficient maturity when the condition would render its assuming its breeding plumage a certainty. Why one genus or species of birds requires a longer time to arrive at maturity than another is a problem I leave to others more learned in such matters than I am to solve. I stuffed these, to me, most interesting birds.

SPOTTED REDSHANK.—The only time I have ever shot one of these birds was as follows: indeed there are not more than about half a dozen recorded occurrences of their appearance in the North of England, and all these are, like my bird, birds of the year, killed in August, and most probably migrating southwards from Lapland to Africa or the south of Europe to spend the winter. The reason of the rarity of this bird's appearance (and some other allied species) in England no doubt is, that we are too far west, and consequently out of their regular line of migration. These species are common, being found probably throughout Europe

and Asia, breeding in the latitude of Lapland in these two continents, and migrating a long way south in the winter. Copied from my notes:—Aug. 20th, 1878. Two birds flying high over Holy Island came suddenly down and settled about 150 yards from where I was sitting. I heard from their note that they were unknown to me, the note more resembling a Green Sandpiper's; two notes, not very loud, and not resembling those of the Common Redshank. I allowed them to settle quietly, and then surveyed the ground to see what could be done. I saw, by creeping, I could get a very long shot. I started to the point, and on getting there, I saw they were in line, one in the shallow water the other on the edge. I fired a wire cartridge from my old gun, and contrary to my expectations, one only rose and went straight away; the other jumped up, but fell struggling in the water. I ran as hard as I could, as I knew I had a prize, and having so often lost birds when wounded rising again, I was anxious to secure it. A single shot had, however, hit it in the head. On coming up, I confess I was puzzled. It looked like a small Whimbrel; the dark crown of the head, and the spotted back, and the under mandible was not red but livid; the legs were hid in the water. On lifting it from the surface, its long red legs revealed the secret, and no description I can give can convey the sensation I felt in having shot and secured a wild rare bird like this the first time in my life. I am not prepared to say what the other bird was, but I think they were alike. Singularly enough, knowing it was the very time for the autumnal migration of this bird, on the evening before I told one of my children that it was the very place for one; but to have met with one and secured it the following day, was surprising. It fell within a few yards of where I got the Wood Sandpiper on the 16th of August the previous year.

GREENSHANK.—I have met with this fine species on three occasions only, in winter plumage, near Holy Island, viz., Nov. 10th, 1853, the 14th Feb., 1845, and 14th Nov., 1845. I have seen it frequently and shot it in August and September, and these, invariably were young birds hatched the same year on their migration southwards to spend the winter. They are at all times wary birds, generally keeping in very open spaces where they can easily see their enemies, and in consequence fly away before you can approach them. I never heard of one on this coast in spring. On Aug. 25th, 1879, whilst prowling about looking for

strange birds at Holy Island, I looked carefully over a wall at the Lough side—as usual water-hens flapped away—and I thought there was nothing worth shooting, however I waited, and to my surprise, I saw a stately looking bird come from behind a hillock. I gazed at it with astonishment—it evidently did not see me; and before I had time to consider, another followed, and I waited till they got near each other and fired. The one I shot, the other seemed to take no notice of what had happened but seemed to walk leisurely on, and even when I got within a few yards of them, I almost wondered it did not fly away, and was prepared to shoot it if it did. I thought it was astonished that its companion did not fly away, and was unwilling to leave it. However on getting very near the reason was apparent; on one side the primaries drooped a very little; but it never attempted to open its wings, merely walking on as I approached. On taking hold of it, however, I found it was severely wounded, but it was not knocked over as I should have thought it would have been. As a penalty for having shot the birds I set them up—they are as usual birds hatched the same year and only a few weeks old.

WOOD SANDPIPER.—I met with this rare bird in the North of England at Holy Island on the 16th August, 1877. It is, as usual, a young bird a few weeks old, most probably migrating from the north of Europe southwards, to spend the winter perhaps in Africa. When I was carrying this bird till the blood ceased to flow to keep it clean, I met with a seaside gunner and shewed it to him, asking him if he had ever seen one like it. His immediate answer was, “There are plenty of them about in winter.” Can anything point out more completely the little reliance that can be placed upon what you are told than this, which is only a sample of what one constantly meets with: this being a bird whose visits are most exceptional here, and which are almost entirely confined to young birds in early autumn!

GREEN SANDPIPER.—In August, 1877, during very high floods in the Tweed district, several Green Sandpipers remained on the flooded grass land only about Holy Island for some days. I think they would have dispersed inland in ordinary seasons, but were detained in consequence of bends in the rivers on which they usually like to remain being covered with water. So soon as the floods abated they left entirely. I did not succeed in getting one of them, as they always rose from such places, as they could see me at a distance, and before I knew where they were. I shot

one in winter plumage which I now have, on the 10th Feb., 1854. I saw it on two occasions previously, when looking for wild ducks from Ewart Park, at the Glen side, when it rose out of shot; but having observed the particular places it rose from, on that morning I went quietly alone, and only looked over the place where I expected to find it and thus secured it. It fell on the opposite side of the river and when I waded across and pushed it up, it piped its peculiar note when in my hand.

SANDERLING.—August, 1878.—Sanderlings were very abundant this year at Holy Island. On the 16th August, I saw a flock of at least fifty, all apparently young birds, of which I shot two. A few days after, the young birds were very numerous, but the old birds had passed on. I shot several young birds, and could have killed any number, but it was quite plain to see that these flocks were entirely composed of birds of the year, by their purer colour, either when rising or flying. August, 1879.—Sanderlings appeared as usual, but fewer old birds, by the time they passed on. The young came in greater quantities than the year before, usually in flocks by themselves. Though you can hardly call them wild, they are what I should call very shift, and often when they rise fly great distances, too far to follow, so that you may see them and think they are easily got, and be disappointed. On the 28th of the month my young friend, George Noble, now Lieut. 13th Hussars, came over for a day or two. We went on to the sands and shortly after saw a flock of birds, perhaps 20, at some distance flying about, amongst which was a white one. They settled and we agreed to walk up to them for both to shoot at the white bird when they rose, approaching the flock in different directions in case they might fly round on rising too far off. We both shot at the white bird as they rose, one fell dead, an old Sanderling, the white bird separated from the others being wounded and flew to Noble's side and soon settled again, we went to it and he shot it as it rose, which it did with difficulty. It is a very singular bird, it was very fat and I had great difficulty in keeping it clean particularly in skinning it and setting it up, however with care I got it done. The crown of the head is cream colored shading to white, the back pale buff with rather a darker V-shaped mark on the shoulders, the rest all white, except the outer sides of the primaries which are rich cream colour—the beak and legs were olive. It is a large bird and is in perfect plumage—probably a young bird of the year as all the feathers

seem quite fresh and not worn as they would have been if an old bird at this season, but it shows no distinguishing marks as to be certain of its age. I am not aware of any other instance of this arctic bird having been anywhere met with in such a singular state of plumage. Though occasionally Sanderlings may be found on the Northumberland coast during winter, there can be no doubt but that the great body of them spend the winter much further southward. I have seen a chance mature bird on this coast killed in the end of September with nearly all the feathers on the back and the tertials changed to those of winter, that is grey. The young birds which either remain on our coasts, or those that perhaps arrive later, gradually begin to acquire the winter feathers on their backs in September, and as in the other allied kinds, acquire the grey backs by the end of the year, but then generally retain most of the tertials of the young bird. Should there be a patch of small stones or gravel or any great extent of sands, you will often find birds like the present kind upon it; whether they get food there or they are there to escape detection I do not know, but I rather suspect for the latter reason, as when on such places they are often motionless, and perhaps you do not observe them until they rise. Their food consists of Sandhoppers and I have also found very small mussels and other shells in their gizzards; these they get from the wet sand particularly when moved by the wind and tide. When flying in flocks they are constantly uttering their peculiar note resembling the word "chip", and as they fly in very compact flocks sometimes several may be killed should they wheel when near you. I think the time has come for naturalists and those who will take the trouble to think, to be able to see matters in their true light, and to give up the stupid idea so many persons will adhere to, which is because a bird like the present which is on our shore till June on its way to breed in the arctic regions, and is occasionally back again by the end of July—that it must in consequence breed on our shores. So long ago as August, 1862, I wrote in the "Field" of having met with a young bird in August with some of its nest down not being worn off the tips of its back feathers, and singularly enough Capt. Fielden during Nares' expedition mentions on the 8th August in Robeson's Channel having met with the young birds just able to fly retaining some of the down on their feathers. It is wonderful how soon such like birds leave the district where they are bred and also how quickly their full powers of flight

are given them, which is as soon as ever the flight feathers have come to their full length.

Ornithological Notes. By ROBERT GRAY, F.R.S.E.

THE following notes upon various birds occurring in Haddingtonshire, Mid-Lothian, and a portion of the surrounding counties, have been made since the date of my last report in January, 1879 :

PEREGRINE FALCON (*Falco peregrinus*).—There are still several eyries of this Falcon in Berwickshire, East Lothian, and Fifeshire. In one of these young birds are taken yearly for training purposes, and I have had repeated opportunities of examining adult birds, male and female, killed at other stations. A fine specimen—a female—was shot at North Berwick on the 18th October, 1879, and an equally handsome bird was killed in Fifeshire a few weeks ago.

RED-FOOTED FALCON (*Falco rufipes*).—A female specimen of this rare bird was shot at Kinghorn in Fifeshire on 21st September, 1880. I examined it before it was skinned, and have the sternum now in my possession.

BARN OWL (*Strix flammea*).—This species, which breeds regularly in the outskirts of this city, and frequents several of the church towers, has been much commoner in the Lothians during the last twelve months than in bypast years, while the

TAWNY OWL (*Syrnium stridula*) has not been so numerous, except in the neighbourhood of Edinburgh.

GREAT GREY SHRIKE (*Lanius excubitor*).—Has been met with repeatedly since November in Mid-Lothian and adjoining counties. One was shot within four miles of Edinburgh in the last week of January, 1881.

TURTLE DOVE (*Columba Turtur*).—A male Turtle Dove was shot near Ratho on the 2nd June, 1879, and sent to Mr. Hope, Edinburgh, for preservation.

GREY PLOVER (*Squatarola cinerea*).—This species visits Portobello sands in October. I examined three which were shot there on the 23rd and 30th, and a fourth which was shot at Leith on the 30th October, 1879.

OYSTER CATCHER (*Œmatopus ostralegus*).—This bird appears

to retain the nuptial plumage until late in the season. Two specimens in full summer dress, which I had an opportunity of seeing, were shot at North Berwick on the 18th October, 1879. I have repeatedly observed the same fact in specimens of the Oyster Catcher shot in other parts of Scotland as late as November.

PINK-FOOTED GOOSE (*Anser brachyrhynchus*).—I can about calculate with certainty on seeing this species every winter in the Firth of Forth. I examined three specimens that were obtained from this district in December last.

BERNICLE GOOSE (*Anser leucopsis*).—Of late years the Bernicle Goose has been observed, with some regularity, to visit the Firth in winter. Several specimens, in very fine plumage, were procured during the same month in which the preceding species occurred.

SHELLDRAKE (*Tadorna vulpanser*) appeared to be very common in various parts of the Firth of Forth at the same time. About twenty very fine and heavy birds, richly coloured, came under my observation in the winter of 1879-80: they were all taken in the estuary. The same remarks apply to the winter of 1880-81.

SHOVELLER (*Anas clypeata*).—A nest of this duck, with eight eggs, was taken by Mr A. C. Stark on 15th May, 1880, on the banks of a loch in Fifeshire. There were eight or ten pairs of Shovellers seen on the occasion and during subsequent visits.

POCHARD (*Fuligula ferina*).—The same gentleman also took a nest of the Common Pochard or Dun Bird, about the close of the month of May, on the banks of the same loch. He had seen the birds paired some weeks previously. Mr Stark adds to this information his opinion that several pairs of Pochard breed annually on the banks of the loch referred to.

GOOSANDER (*Mergus merganser*) has been very common during the past winter in various localities. I saw several specimens that had been shot on the Yarrow and sent to Edinburgh for preservation. A very handsome young male bird from Dunbar, now in my own collection, was shot on the 21st January, 1880.

RED-THROATED DIVER (*Colymbus septentrionalis*).—I examined a fine specimen of this diver which was shot at North Berwick on 18th October: it shewed marked traces of the gular patch yet remaining. Another specimen shot at the same place on 16th March was in full summer plumage; while a third, killed on the same day at North Berwick, had not changed a feather from its winter colouring.

BLACK-THROATED DIVER (*Colymbus arcticus*).—Has occurred repeatedly during the past winter in the Forth from Leith to Dunbar. A very small specimen came under my observation: it was shot in the last week of February and shewed considerable traces of the summer plumage appearing on the back.

SOLAN GOOSE (*Sola Bassana*).—I observed on the Bass Rock in 1879 several young birds in the down as late as the 13th September. These were probably the offspring of birds that had been robbed of their eggs earlier in the season.

COMMON TERN (*Sterna hirundo*). }
ARCTIC TERN (*Sterna arctica*). } On 31st August, 1879, I observed at the entrance to Dunbar harbour a very large and noisy flock of Terns including both these species. There were several hundred of birds in the flock, and they clustered together like a swarm of bees on one of the outlying rocks near the battery, making all the while so great an onctery as to attract the attention of a number of fishermen on the pier.

LITTLE GULL (*Larus minutus*).—A male Little Gull was shot near North Berwick on 15th August, 1879, and sent for preservation to Mr. Hope, George Street, in whose hands I saw it.

REDNECKED GREBE (*Podiceps rubricollis*).—This species has been rather common in the Firth of Forth during the past winter (1880-1881). I have seen and examined a number of specimens. One of them was killed on the Lammermoors during a snow storm by a shepherd who knocked it down with a stick. Several were obtained near Leith pier.

COMMON SKUA (*Lestris cataractes*).—I examined a specimen of this Skua which was shot at Cramond on 29th December, 1880. It had gone up the Firth in pursuit of a flock of Gulls and located itself in the neighbourhood of Cramond island where Gulls rest in great flocks at low tide on the sands.

POMARINE SKUA (*Lestris pomarinus*).—I examined between 30 and 40 specimens of this Skua that were shot in East Lothian, chiefly in the neighbourhood of North Berwick. The birds made their appearance about the middle of October, 1879. Very large flocks appeared off Dunbar and were so tame as to perch in crowds on the masonry of the pier. They would not leave on being shot at, which shewed they had either come shorewards through fatigue and stress of weather, or been quite unaccustomed to the presence of man. Numbers were killed along the coast

between Queensferry and Berwick-on-Tweed. One of those I examined had devoured part of a Kittiwake—pieces of the skin and neck feathers being found in its stomach.

BUFFON'S SKUA (*Lestris Buffoni*).—A male bird of this species was shot at Drem in East Lothian on 17th October, 1879; another, also a male, was shot at Queensferry on the 14th of the same month.

GREATER SHEARWATER (*Puffinus major*).—A very fine dark coloured specimen of this Shearwater, probably a young bird, was shot at North Berwick on 25th October, 1879.

List of Lepidoptera captured in 1879 and 1880. By SIMPSON BUGLASS, Ayton.

NOLA CRISTULALIS. Ayton Castle Garden.

ELLOPIA FASCIARIA. Fir Woods, Ayton.

EMMELLESLA ALCHEMILLATA. Ayton woods.

EUPITHECIA PIMPINELLATA. Ayton woods.

„ LARICIATA. Fir woods, Ayton Castle.

„ INDIGATA. Ayton woods.

„ VULGATA. Ayton.

„ ABSYNTHIATA. Sea banks, Burnmouth.

„ MINUTATA. Coldingham Moors.

„ ASSIMILATA. Ayton Castle Garden.

LOBOPHORA LOBULATA. Eye-banks.

NOTODONTA DROMEDARIUS. Bred from Caterpillar I got feeding on Alder, Ale-water dean.

CYMATOPHORA DUPLARIS. Ayton woods.

APAMEA FIBROSA. Sea banks.

AGROTIS VALLIGERA. Ayton woods.

„ PYROPHILA. Sea banks.

ANCHOCELIS LUNOSA. Ayton woods.

CERASTIS SPADICEA. It is plentiful. It has always been confounded with *C. VACCINII*.

EUPERIA FULVAGO. Sea banks, Burnmouth.

HADENA DENTINA. Ayton Castle Garden.

PLUSIA INTERROGATIONIES. Captured in my own garden.

On the Occurrence of Certain Insects in 1880. By JAMES HARDY.

THE year 1880 offered some remarkable instances of the prevalence of certain insects in excessive numbers, of which I have collected a few examples within the district, to place among the periodical events of the seasons, which from time to time have been commemorated in the "Proceedings" of the Club.

APHIDES. In the early part of the summer, towards the end of June, Aphides swarmed on the terminal shoots of leaves of gooseberries and black currants. These were *Aphis Grossulariæ*, a green coloured species, which was acquiring wings about July 13th. There was an additional species (*Aphis Ribis*) on the leaves of the black currant, which caused the bushes to become defoliated. To keep down the gooseberry species, the tufts of terminal leaves on which it clustered, required to be pinched off. On July 13 the white-throats, as well as a pair of house-sparrows, were very actively engaged feeding on these Aphids. The crop of black currant berries was a failure. These Aphids were generally prevalent. About the same period the young shoots of hawthorn were much kept back by crowds of the slate coloured *Aphis Crataegi*, as well as by mildew, that considerably impaired the fine verdure of the hedgerows, which the previous winter's frost had also helped to blight. Roses also became very unsightly by the attacks of *Aphis Rosæ*, and there might be other species present. The double-red *Lychnis diurna*, a showy and long flowering borderer, completely lost its beauty, till July rains washed a portion of its enemies off, being overloaded with *Aphis Lychnidis*. *Hieracium aurantiacum*, a plant not easily made to succumb, was greatly oppressed with *Aphis Hieracii*. At Chirnside I observed *Phyllaphis Fagi* on beech fences; but not elsewhere; neither it, nor the blanks occasioned by its presence, could be detected at Morpeth. In autumn the leaves of limes at Tynninghame were much besmeared with honey-dew. The insects however—which being spotted winged are rather pretty, were then in a quiescent state.

There is a puzzling species of *Aphis* which rolls the margins of the leaves of the smooth-foliaged variety of *Hieracium vulgatum*, where it grows in crevices among the cliffs of Silurian rocks between Redheugh and Dowlaw. The winged state has not yet been observed. Mr. Buckton says it is a *Siphonophora*, but pro-

bably not *S. Hieracii*, which is not known to roll the edges of the leaves. It is very small, and green-coloured, and lives within the involute portion of the sides of the leaves on which it operates. When both edges are affected the leaf, when the two rolls meet, is like a pod.

Chermes or *Adelges Abietis* infested the terminal buds of the spruce-fir in an extreme degree last season, even in high exposed woods at 600 feet of elevation. I have seen scraggy ill-thriven trees almost killed with the pseudo-cones of this species; and some remarkable deformations of leading shoots when the gall had been apical. The trees affected by it appeared to be spotted with frost-bite, or to be sprinkled with some acid poison. On February 21st and 22nd, 1881, some of the females of the autumn brood were alive, and considerably grown—of a plum-coloured brown—on the bark of the shoots at the base of next year's buds. At that period Dr. Stuart found at Whitehall a little colony on the leaves of a twig of spruce, which were enclosed in a glazed sealed-up envelope, much darker hued than the exposed females. These were probably males that had not attained their developement when winter surprised them. This species does not increase solely by eggs, for the researches of Ratzeburg, (*Forst-Insecten*, Vol. III.) shew that the female can produce living young as well as eggs, before the winged state is attained. At the period referred to, the *Chermes Laricis* was in a very dwarf condition, and was concealed in the fissures of the bark of the larch twigs, and specked them like grains of gunpowder. In spring they crawl up, and attack the tufts of foliage issuing from the buds, shortly after it acquires prominence; and when the buds are restrained by the frosts from pushing out their needles, they occasion great damage by absorbing the sap. When the trees are closely planted they aid greatly in destroying the vitality of the lateral branches. Larch trees in this condition have seldom more than a few live boughs, near the summit of the long lean poles that form their stem.

PLUM SCALE. Dr. Stuart, 12th Feb., 1880, sent me from his garden at Chirnside, an assemblage of shining brown Scale insects, clustered round some knots on a branch of a Victoria plum tree. They agree to the characters assigned to *Lecanium Persicæ* (v *Amygdali*.) Some of the Scales have a small perforation, whence a parasite had issued. Another Brown Scale found at Alnwick on a branch of black currant is mentioned in Club's Proc. viii. p. 403.

CATERPILLAR OF THE APRICOT STEM AND BRANCHES.—Being at Tynninghame Gardens on Sept. 6th, 1880, Mr. Brotherston directed my attention to the state of the Apricots. He stated that they were dying out on walls in a great number of gardens, and that this is the case at Tynninghame. A Caterpillar mines between the bark and the wood, and throws out a brown dust or "frass," along the channel which it excavates; the bark cracks and peels off above the injured portion; and blobs of gum issue from the wounds, depriving the tree of its due nutriment and strength. The caterpillar was said finally to perforate the wood. The attack (so far as I witnessed it) is made on the base of the stem, where the branches divaricate. Many old trees are cut off by it, dying away at the bottom, and then the rest of the tree decays, and the fruit falls off in the spring. A caterpillar was dislodged with a knife. It was smooth, naked, of a white colour, with a light brown scaly head, and about the size of the caterpillar of a Tortrix. Unfortunately the specimen got crushed before I could make a description of it. Mr. Brotherston makes the following statement of date March 9th, 1881. "About the caterpillar which affects apricot trees, I cannot state the amount of damage which it does. Mr. Richard Crossling at St. Fagans, South Wales, was the first to notice it, and published an article in 'the Journal of Horticulture' for 1879, naming it the caterpillar of the 'Apple Clear Wing,' and stating at the same time his belief, that the caterpillar was the cause of apricots dying off. He was here in the beginning of last winter, and when I expressed my doubts as to its being responsible for the amount of damage that he wants to prove it guilty of; he said he never found a branch die off, which had not previously been subjected to the ravages of this caterpillar. It was, of course too late in the season to find out whether the apricot trees here bore proof of his theory being correct or not. There is no doubt as to a caterpillar boring round the inside bark (*Cambium*), but that is no proof of its being the *sole* cause of a disease that has puzzled everybody who has given the matter a thought for generations back."

According to Mr. Stainton's Manual, i., p. 106, the "Clear-wing of the Apple" is *Trochilium Myopæforme*. Its length is 8 to 10½ lines. "Fore-wings, margins blackish; hind margin tinged with purplish; central spot blackish; fringes purplish; head and throat black, abdomen black, with one broad red ring—June

and July. Larva undescribed. Feeds on the stems and branches of Apple trees. Bristol, Epping, Kingsbury, Lewes."

It is to be hoped that the mystery will be removed from this calamity, now that an active participant in it, has been discovered. Analogous to it is a similar insidious disease occasioned by the white larva of another Clearwing, *T. Tipuliforme*, which perforates the pith of the currant bushes, (Stainton's Manual, i. pp. 105-6.) Mr. Curtis described it as a *Sphinx* in one of his articles in the "Gardeners' Chronicle," 1841, p. 779. Mr. Wailes says that *T. Tipuliforme* occurs at Newcastle, and is common in one garden at Darlington. It "appears generally to affect old gardens, where the red currant bushes (on the medulla of which the larva feeds, passing, according to Dr. Staudinger, one winter in that state) are gnarled, and have been long in cultivation." (Catalogue of the Lepidoptera of Northumberland and Durham, p. 46.) On the authority of Mr. Alfred Wallace, this pest has been introduced into New Zealand along with the currants; and doubtless this has been the way in which this species which affects the Apricot, has been disseminated in Scotland. It adds to the probability that Mr. Crossling is right, that considerable mischief of a similar character is done by insects of this genus in the United States of America. In April, 1873, the State Entomologist reports that in Braxton County, West Virginia, the borer, *Ageria* (*Trochilium*) *exitiosa*, killed some peach trees. (Monthly Report of the Department of Agriculture, 1873, p. 239.) In 1872, a correspondent, when examining his peach-trees for the peach-borer, discovered a great quantity of small whitish worms, about the 0.40 of an inch in length, and of a very slender form, swarming in the exuded gum, saw-dust, and feces with which the mouths of the burrows made by the peach-borer were filled. These, however, when hatched, were recognized as belonging to *Mycetobia* (*Mycetophila*) *Persicæ*, a kind of gnat, which had nothing to do with the larvæ of the peach-tree borers, except to feed upon the exuded gum, &c. These even, when young, "can be readily distinguished by their heads, their more robust forms, and by their six small feet on the first three segments of the body." (Report of the U. S. Commissioner of Agriculture, for 1872, pp. 114-115.) In the Report for 1871, a Mr Batcham as a remedy for the "peach-borer" recommends the following recipe :

"I take a five-pound can of carbolic soap, called 'carbolic plant-protector,' costing two dollars, dissolve it in 10 or 12 gallons of hot water by stirring or

letting stand over night, then add 20 gallons of cold water, and apply this liquid, with a paint-brush, to the base of each tree, for 8 or 10 inches in height, first clearing away any weeds or loose dirt with a hoe, and taking pains to have the liquor enter the crevices of the bark where the insect deposits her eggs. An active man or lad will go over, in this way, 500 trees in a day."

The middle of June is suggested as the best time for applying the remedy in that latitude—northern Ohio.

Another species in N. America is a deadly enemy to the vine. "Mr Fred. J. Kron, of Albemarle, North Carolina, complains bitterly of the injury done to all varieties of grape-vines, by the grape-vine borer, *Egeria polistiformis*. Mr Kron states the insect has destroyed for him 107 varieties of grapes, derived from the Luxemburg in Paris, including 5000 vines; and adds that there is but one variety that has, so far, defied its ravages, and that is the scuppernong, which flourishes in the midst of devastation caused by the borer, all around it." (Report of U.S. Commissioners of Agriculture, 1873, p. 159).

These facts have an obvious bearing on the disease of the Apricot.—I have only seen one species of *Trochilium* in Berwickshire, which occurred as far back as 1839, but none of the Entomologists in the Club could at that period determine it, and I have only seen it once since. It frequented the freshly expanded foliage of young birch trees near Penmanshiel; and may possibly be refound. Dr. Johnston, and ultimately, I believe, Mr. Selby, got my specimens.

ROSE-LEAF SAW-FLY.—For two years by-past, the leaves of garden roses here of various kinds, have had their upper pellicle eaten by larvæ, to their great disfigurement, and to the diminution of the vigour of the bushes. On the 13th of July, 1880, I picked up a considerable number of black saw-flies feeding on the honey-dew of Aphides that infested these roses, or that were resting on the rose leaves, which being new to me, I secured, and sent to Mr. Peter Cameron, jun., Glasgow, who is engaged in a work on British Saw-flies, and has more than any native naturalist, paid attention to their specific differences and economy. Mr. Cameron writes:—the insect is *Eriocampa Canina*, Cam,—described by Westwood many years ago, under the name of *Selandria æthiops*, Fab, as injurious to roses in gardens; and by continental authors under the name of *Athalia Rosæ*. I found it last year near Dumfries; and I dare say it is common in gardens."—At present my copy of Mr. Westwood's paper is mislaid,

but I have found the reference, which is "Gardeners' Chronicle," 1848, p. 524. Mr. Westwood recommends to powder the trees with lime, or syringe them with gas-tar water. I prefer to look at them as they are, although they have a withered look.

GOOSEBERRY CATERPILLARS.—These are also the product of a saw fly. They were scarce here last year, after two years prevalence. Others have not been so fortunate. About them and other insects, I have the following notice from Mr. Simpson Bugglass, Ayton Gardens: "I do not remember of a year like last for wasps and aphides. I need not mention instances, for most trees and shrubs were swarming with them. We beat the gooseberries into a sheet, and destroyed great quantities of them, and the caterpillars at the same time. The year 1879 was a bad season for caterpillars. We have tried different ways to get quit of them, but the beating stick and sheet is the most effectual. Strike the bare wood of the branches, and a very light stroke will suffice to shake them into the sheet, then dig a hole and bury them in it. We cleaned the bushes in a short time." Every entomologist knows how successful a collection can be made with an umbrella into which the bushes are shaken; and this is a practical application of it.

LEPIDOPTERA AND OTHER INSECTS.—*Plusia Gamma* so prevalent in 1879, was absent here in 1880. I did not see one; another observer remarks that in 1879, "during sunshine you could not look at a flower that they were not on, while this year I only saw two." *Cynthia Cardui* was almost as scarce. I only saw two on a gravel walk near the house on June 2nd; perhaps chosen for warmth. For two years Earwigs have been unfrequent; and I did not observe any *Clegs*; but "Horse-flies" (*Stomoxys calcitrans*) were plentiful, and came early into houses. "Cuckoo-spit," has been very prevalent in summer 1879-80; ferns in particular were withered by it, as if a shower of acid matter had fallen on them.

WASPS.—Wasps were very scarce in 1879, but were complete pests in 1880. Females, I observed, were abroad late in the woods in November, 1879; and two or three nests had been observed in summer in the Pease dean woods; the first that year was seen May 12. When fishing in July, I saw extraordinary numbers about hedge-rows, and by planting sides, of the common wasp, and they frequented the burn sides, and oozy swamps to quench their thirst. The excessive quantity of Aphides in the

early part of the year, by supplying a liberal amount of food, would encourage their multiplication. I heard a good deal more about them than I was witness to, and some of my correspondents have supplied me with facts worthy of preservation, as characteristic of the season.

A field of corn on Middlestots farm could not be cut for some time for wasp nests, whose inmates stung the horses when the reaping-machine crossed them. Grapes at Kimmerghame had to be preserved in bags to prevent their being pilfered by them. In another locality they discovered a passage through the key-hole into a closet where jelly was stored, and a constant stream of robbers kept going and coming till the inlet was closed. Mr Robert Renton, at Fans, thus writes of the hurtful insects of the year: "Aphides were numerous till the cold rains in July, but after that I did not think they were worse than ordinary. But it was different with the wasps. One Saturday, August 21st, I told the boys when they were at home from school, that I would give them a penny for every wasp nest or 'bike' they would bring me. The number brought by sixteen boys was 37. The heap looked like a cart-load. They were brought from rabbit-holes, stone-dykes, and banks, and from hedges and trees where they were suspended—in fact from every conceivable place. When at Fairnalee in 1875, it was such another year for wasps. In harvest when cutting the corn during the sunshine in the park, we had to miss portions, that had to be cut in the morning when the corn was damp. When attempted to be cut when the insects were active, the horses got stung and became unmanageable. In the year 1868 or 9 there was another outburst of wasps. Are wasps rife every six years?"

Talking about them at Tynninghame, on Sept. 6, Mr Goodfellow, gardener, Newbyth, said they were very numerous with him, there having been no rain in winter to kill them. In spring they frequented the laurel for some sweet exudation from two glands situated at the base of the leaves. On one occasion he found them usefully employed in cleaning a plant in the greenhouse infested with scale. Leaves where Aphids abounded were much attended by them. They killed large numbers of humble bees. Some of the walks were quite strewn with the dead bees, but they did not appear to eat them. Hundreds of wasps had been slain to get rid of them. The nests were in all directions. They were mostly of the common species. One gardener chanced

to leave his grape house open, and it was cleared in twenty-four hours. They are most eager on apricots, but owing to the down do not attack peaches. If there is a dead bird within their range, it will be nearly devoured by them. They do not sting one, if they were driven away, unless when near their 'bike.' At Tynninghame I saw a large apple, not yet ripe, half-eaten by them. The gardens there had been particularly liable to them, as they had not been visited with rain of any continuance, throughout the summer, and were parched with drought. Mr Brotherston writes me : "The number of 'bikes' was particularly noticeable, for they were literally in every hole it was possible for them to gain an entrance to. Gardeners in the neighbourhood destroyed the nests not by ones and twos but by the dozen. They did not do much damage here, as indoor fruits were protected with hexagon netting, and outside fruit was gathered mostly before it was mature. The apricots, however, were completely eaten up before they were anything like ripe. A very noticeable 'trait in their character,' is their want of courage, or, mildness of temper, perhaps would be a better definition. I believe I am correct in taking it to be a common opinion, that the common wasp, is to be regarded as a ferocious creature, unsusceptible of the fear of man. But they are really quite the opposite. While working amongst the wall-trees, doing necessary summer pruning and gathering fruit, I invariably found the wasps to take to their wings, as if anxious to get out of the way. Over and over again I have pulled fruits with wasps in them, and turned them out with the tips of my fingers, without their ever attempting to sting me. They will settle on the faces of children when besmeared with jam, and will not hurt them. Their voracity and wonderful appetite for all kinds of food that came in their way was very noticeable. Dead rabbits and birds were cleaned on the shortest notice. 'Bumbees' were not carried to the nests, but eaten up where killed. Like bees, wasps are children of the sun ; cold utterly puts a stop to their activity."

Another sketch of wasp-life has been furnished by Mr John Cairns of The Hirsel Gardens. "The most unobservant could not fail to notice the unusual number of wasps last season. I never remember seeing them so abundant. In spring we encourage the boys about the Gardens to kill as many 'queens' as they can, allowing them a small remuneration ; and without much effort, 300 queens, were this spring killed by two or three boys.

The queens are mostly found near a large hot-bed that we have, also along the walls; and later on they work on the bloom of a kind of *Mespilus*, which is a sure find. The queens take up their winter quarters in dry places, notably in crevices of wood about old bridges, sheds or posts, and even under the sarking of open roofed houses. Their nests are invariably found in dry warm grassy banks, or the margins of walks, or in out-houses. Two hundred nests were taken here last summer, and still the wasps did not seem greatly diminished. Fruits of all sorts, especially when getting ripe, if not protected soon vanished, particularly those that possessed saccharine matter; but when other fruit failed even apples were not safe. The rapidity with which news get communicated among them is something wonderful. A single wasp will be seen in the early morning in a house of grapes; shortly after it will be visited by two or three, which will be augmented to myriads before the day's close, to the complete destruction of the crop. Nothing seems to come amiss to them in the way of food. Their tastes seems to comprehend everything between the most offensive garbage and palatable fruits."

At Ayton the wasps appeared to be more irritable than at Tynninghame, for the workmen could scarcely get the fruit pulled for getting themselves stung.

In North Northumberland wasps "took possession of strawberry beds, defying eviction. A gentleman in the Cornhill district took the trouble to count the number killed by an ordinary glass trap. This was placed within a few yards of his front door. The smallest 'bag' for one day was 195; the highest 1,262, and the total 5,273." A large number of nests were also destroyed, but their numbers appeared to be undiminished. (*Ber. Adv.*, Aug. 27, 1880.)

Mr. Alexander Shearer, late of Yester gardens, writes Oct. 7, 1880. "The Pear trees on walls this year were attacked by a kind of green, or rather brownish-yellow fly. The leaves were covered by them, and were honey-dewed in consequence, which supplied the bees and wasps with abundance of food at the time, which was early in July. The wasps acted as scavengers and carried away the flies. This season the wasps were a complete plague; there never were so many seen here."

The "fly" on the pear trees at Yester is probably *Psylla Pyri*, L. In Germany, however, M. Foerster describes other three species that attack pear trees, viz. *Ps. pyricola*, *Ps. apiophila*) of

which he had an English example) and *Ps. pyrisuga*, (Verhand. Nat. Vereine der preussischen Rheinlande, 1848, pp. 77-79.)

In the Club's "Proceedings," vol. iii. pp. 180-184, there is an article by Mr Selby "On the Wasps within the limits of the Club." He describes four species as being found near Twizell, viz. *Vespa vulgaris*, *V. rufa*, *V. arborea*, and *V. Britannica*. *V. Britannica* now gives place as a synonym to *V. Norvegica*, Fab. To these I have added *V. sylvestris*, Scop (*V. Holsatica*, Fab); ("Proc." vii., p. 154, having found a queen on the flowers of *Comarum palustre* in Cold Martin Moss, and one from Penmanshiel, Berwickshire. Mr Bold had only rarely met with it. In my collection are two specimens from near Gibside. *V. vulgaris* and *rufa* are ground wasps for the most part, and are both equally numerous; the other three suspend their nests from trees or shrubs. *V. arborea* I have not seen. *V. Norvegica* is frequent among fir woods. There is a sixth species, *V. Germanica*, Fab., which will probably occur in the district, having been captured near Newcastle by Mr Bold ("Catalogue of Aculeate Hymenoptera," p. 19); and near Aberdeen and Banchory ("Trans. Nat. Hist. Soc. Aberdeen," 1878, p. 46). It breeds in the earth.

Dr Paxton of Norham mentioned to me that a most effectual vesicatory can be extracted from wasps' nests. They are dried and ground down, and the product is of a brown colour when duly prepared. It was employed for blistering purposes by a horse doctor in Norhamshire, and answered admirably.

MIGRATORY LOCUST.—By an oversight in former years, occurrences of the Migratory Locust (*Acrydium migratorium*) have only been recorded in scattered instances, but during the present autumn, the local newspapers have kept us fully apprised of the presence of a detachment of these wanderers from a warmer clime, of which a sprinkling reached the Border counties, and even the northern extremity of Scotland. As visitors to Britain they have been known for hundreds of years. On Aug. 27, a fine specimen was taken at Spittal by Mr Thomas Fotheringham, and presented to the Berwick Museum, (*Ber. Adv.* Sept. 3. 1880). Mr James Mein, Lamberton, on Aug. 31st, while his people were engaged in harvest operations, observed a large insect flying across the standing corn, which was captured; and he caught another a few days afterwards in the adjoining field, also among standing corn. Both proved to be migratory locusts. They ate cabbage leaves and turnip shaws greedily. (*Ber. News*, Sept. 14).

Subsequently other three were captured—two at Tweedmouth, and one at Spittal. (*Ber. Adv.*, Sept. 17). On Sept. 7th, a locust was found on Caledonia Farm, Juniper Green, in a field of oats. (*Scotsman*, Sept. 9.) A locust was found about the end of August by a schoolboy in a field of grass near the Old Man of Wick, Caithness-shire (*Ibid*, Sept. 13), and another, the third in as many weeks, was caught alive in the island of South Ronaldshay, Orkney, by Mr Magnus Cromarty (*Ibid*). Before the end of September, Mr Andrew Reid, gardener, found a specimen at Wellfield, near Hawick, and two were found at the Hawick County Police Station. (*Kelso Chron.*, Oct. 8). Sept. 23rd another had been captured in a half torpid condition by harvesters at Whitehouse on the Mertoun estate, having been brought among some sheaves of corn to the stackyard. When sent to Mr Brotherston, it nibbled for almost a whole day at a cabbage leaf, varying its diet by an occasional bite of wheaten bread. A still larger specimen was found at Cessford, Sept. 28, and brought to Kelso by Mr Wood, keeper, Floors, (*Ib.* Oct. 1). Mr Brotherston heard of several that were not recorded, among others one taken at Otterburn. A locust was found at Haithwaite Farm, Nicholforest, Cumberland, and several were found on the cliffs near Scarborough in the last week but one of September. (*Kelso Chron.*, Oct. 1). I examined one of the specimens of this flight, and ascertained that it was correctly determined.

DEATH'S HEAD MOTH.—A fine death's head Moth (*Acherontia Atropos*) was found by Mr D. Elder among the stems of some champion potatoes, near Hawick, in the end of September; it died shortly after being picked up.—(*Kelso Chron.*, Oct. 1.) Mr A. Elliot, Samieston, Jedburgh, obtained a single specimen of this moth at rest in June. See some interesting notes by him on some of the rarer Lepidoptera, taken in Roxburghshire in 1880, in "Entomologist's Monthly Magazine," April, 1881, pp. 257-8.

Some Records of Remarkable Trees.

Measurements, &c., of the Dunse Castle Araucarias. By MR PETER LONEY, Marchmont.

No. 1.—Height, 39 feet 6 inches, and has 26 whorls of branches.

Girths at 1 foot above the ground, 7 feet.

„ at 3 feet „ „ 5 feet 4 inches.

„ at 5 feet „ „ 5 feet.

This tree is not growing so fast to height as it had done when younger. The severe winter of 1859 and 1860 may have given it a check, as it has not added 6 feet to its height during the past 20 years; the branches are close and pendulous, and apparently more vigorous than the stem near the top.

No. 2.—Height, 36 feet, and has 23 whorls of branches.

Girths at 1 foot above the ground, 5 feet 9 inches.

„ at 3 feet „ „ 5 feet.

„ at 5 feet „ „ 4 feet 10 inches.

This tree is growing vigorously; it is not so densely furnished with branches as the first, but it is a very fine specimen. At present there is a cone on it.

No. 3.—Height, 33 feet, and has 21 whorls of branches.

Girths at 1 foot above the ground, 3 feet 6 inches.

„ at 3 feet „ „ 3 feet 2 inches.

„ at 5 feet „ „ 3 feet 1 inch.

This tree is growing rapidly; in a few years it will be the highest; the branches are not so close, and come out more horizontal than the others. They shew no signs of the frost of 1879, and the shrubs near them are uninjured.

5th October, 1880.

The Gainslaw Hollies. By M. G. CROSSMAN, Esq.

I walked to Gainslaw to-day, and so far as I can judge, the Hollies I mentioned to you are about 45 feet high; one specimen in girth 5 feet 6½ inches, and the largest 10 feet.

Although these trees have been killed this winter, they have for the last 10 years shown symptoms of decay. This is owing to so much bark having been taken from them for bird-lime. I certainly do not know of such trees in this district, but Gainslaw was always known by its trees.

The Hollies are not yet cut down, but stand as very sad monuments of the past, and, with the exception of the old vault where the “Ogles” lie, are almost all that remains of the old Gainslaw Garden.

Berwick, 27th August, 1880.

Yester House. By Mr ALEXANDER SHEARER.

Beeches thrive well here. They are a peculiar variety the same as at Tynninghame and at Newbattle Abbey. I have heard that they were brought from Holland, by one of the Marquises of Tweeddale. I give you the measurement of several of the largest trees of different kinds growing here at different dates.

Measurement of the circumference of the following trees growing at Yester at 3 feet above the ground :—

	1854.		1863.		1880.	
	ft.	in.	ft.	in.	ft.	in.
Oak	13	10	14	0	14	10
Oak	13	6	14	2	15	6
Beech	11	2	11	9	12	6
Larch	9	9	11	8	12	4
Larch	9	6	10	3	11	3
Spanish Chestnut	16	0	16	8	18	2
"	12	6	13	3	14	9
Scotch Fir	9	6	9	9	10	7
Plane Tree	14	5	14	7	15	11½

Minto, Cavers, and Wells, Roxburghshire. By Mr JOHN GALLOWAY.

There are some very fine specimens of different sorts of trees on Minto estate, the most prominent being the Larch, which was introduced to Minto by the then Sir Gilbert Elliot in the year 1745. The following is the measurement of the largest 1 foot from the ground :—75 feet height of the bole, by 9 feet 4 inches in circumference; 72 feet bole by 11 feet; 70 feet by 9 feet 6 inches; 105 feet by 7 feet 10 inches : Silver Spruce, 120 feet bole by 10 feet 4 inches; 110 feet by 11 feet; 80 feet by 12 feet. Ash, 75 feet bole by 10 feet. The largest and oldest Ash tree on Minto was blown down in December, 1878; but the stump, which is standing, measures 17 feet in circumference, 1 foot from the ground.

There is an old Ash tree at Cavers, supposed to be 450 years old; it is called the Pope, owing to some of the Douglas family long ago having prophesied this tree would stand as long as Popery reigned. At one foot from the ground, it is 19 feet 9 inches in circumference; at 5 feet, 16 feet 4 inches. [This is possibly the Ash tree which Mr Hutchison—Trans. Highland Society, vol. xii. 1880, 4th Ser., pp. 146-7—gives as a very handsome tree, 40 ft. high, 12 feet the length of the bole; circumference of trunk at one foot, 19 feet 4 inches; at five feet, 15 feet 8 inches.] Sycamore tree 1 foot from the ground, 14½ feet in circumference, at 5 feet, 12 feet. [Mr Hutchison (p 169). gives this tree as 56 feet high, 25 feet length of bole, 14 feet 2 inches at 1 foot, and 11 feet 6 inches at 5 feet.] Beech, at one foot, 16 feet 8 inches, at 5 feet, 41½ feet in circumference; length of bole 42 feet. [Mr Hutchison (l.c. xiii. 1881, pp. 194-5), gives a Beech at Cavers as 53 feet high, length of bole 20 feet, circumference at 1 foot 17 feet 2 inches, at 5 feet 12 feet 3 inches.]

There are some very fine trees at Wells, the seat of Sir William Elliot, Bart. Oak, 13 feet 4 inches in circumference, 16 feet bole, 11½ feet by 24 feet bole. Beech, 9 feet 3 inches by 36 feet bole. Sycamore 10 feet by 24 feet bole. Spanish Chestnut, 13 feet in circumference, by 9 feet bole.

The Great Oak at "The Oaks," near Dalston, Cumberland, and other Notes about Oaks.

AFTER the Club Meeting at Gilsland in September, I went on to Parkend, near Rose Castle, Cumberland, to spend a couple of days with my old friend,

Mr John G. Grieve. After passing through the agreeable village of Dalston, and not forgetting to mark, what the poet Southey had done previously, that the river Caldewhere, has left unmistakeable evidences of being a "most ungovernable stream," I came to the outskirts, and there I was arrested by the sight of a wonderful old Oak, of great bulk of bole, and wide spread of the branches, growing in front of a mansion, which I since find is called "The Oaks," and forms the residence of the owner, Mr Richardson. In this patriarch of trees, there is no great height of the bole, but it is the stoutest tree of the kind that ever I saw. It looked uniformly thick, till the great branches, each of them the size of a tree, extended their umbrageous arms. The trunk appeared to owe much of its bulk to the wood deposited by these great feeders in their endeavours to re-root themselves in the soil, to which the short stem permitted the readier access. Another great branch nearer the root had been lopped off. After my return, the dimensions of this tree were obtained, and I append them here, as being well worthy of being placed on record.

The first measurement round the bottom of the tree is 22 feet; the second one, about 5 feet from that, is 22 feet; then the third one, near to the branches, is 18 feet 2 inches; then come four branches:—

No. 1, Branch, 9 feet 6 inches.

No. 2, Branch, 7 feet 8 inches.

No. 3, Branch, 8 feet 6 inches.

No. 4, Branch, 7 feet.

There were other good oaks in the grounds, but I only saw them at a distance.

In the Bishop of Carlisle's Park at Rose Castle, Oaks are the predominant timber, and what I saw were very cleanly grown, and tall trees. The acorns were plentiful this season, and I am told that great flocks of wood-pigeons in autumn assemble to feed upon the store here provided. It is a secure retreat for the Jay, whose frequent screaming betrays it into no danger of being persecuted here. There is also a most populous rookery in the woods to the north of the episcopal mansion. These are doubtless, some of them, descendants of the rooks, about whom the Rev. Thomas Robinson, rector of Ousby in Cumberland, in his "Essay towards a Natural History of Westmoreland and Cumberland," 1709, speaks, as acting in the capacity of tree-planters, when they had more acorns than they could immediately dispose of, by hiding them for a future occasion:—

"About twenty-five years ago, coming from Rose Castle, early in the morning, I observed a great number of crows very busy at their work, upon a declining ground of a mossy surface. I went out of my way on purpose to view their labours, and I found they were planting a grove of oaks. The manner of their planting was thus: they first made little holes in the earth with their bills, going about and about, till the hole was deep enough, and then they dropt in the acorn, and covered it with earth and moss. This young plantation is now growing up to a thick grove of oaks, fit for use, and of height fit for crows to build their nests in. I told it to the owner of the ground, who observed them spring up, and took care to secure their growth and rising."

J. H.

On some of the rarer Lepidoptera. By ANDREW KELLY.

COLIAS EDUSA.—In September, 1877, I noticed this rare Butterfly near Longniddry; and other stragglers are recorded in the "Proceedings" for that year. Since then, the wanderers of 1877, or perhaps of years long previous to that date, have extended their range along the coast nearly as far as Aberlady. It was found this year at Boglehill. I see no reason why it should not become Scottish, and co-extensive with its food plant.

ARGYNNIS AGLAIA.—Cockburnlaw. I saw it in great profusion about the roadside from Dunse to Abbey St. Bathans, just as one leaves the plantations and the great grey willow bushes to strike into the moor; also on the whinny banks of the Whitadder from the Abbey to Barnside. In 1879, while I was making my way through the Abbey plantations in search of ferns, I saw lots of the Wood Argus (*Satyrus Egeria*). The Ringlet (*Hipparchia Hyperanthus*) is still plentiful in our woods; but the Wall Brown (*Lasiommata Megaera*) appears to have become scarce.

VANESSA CARDUI (The Painted Lady).—Very plentiful in 1879; Mr Turnbull captured on one forenoon in August upwards of a score in as many yards of a woodland road, where *Io* was taken in 1873. Berwickshire comes up to the level in this genus; her *Vanessæ* are complete. The large Tortoise-shell rests as yet on one specimen on the authority of John Anderson. It is very unpleasant to think that *V. C-album*, the butterfly of our youth, has left us for good and all. It is more than twenty years since I saw it.

POLYOMMATUS ARTAXERXES.—Hartside is perhaps the most wealthy locality in Berwickshire for this insect. The braes are rocky, jagged, and gravelly, with often the rock-rose for their only covering, a plant relished by few other insects besides itself.

ACHERONTIA ATROPOS.—I have seen the larvæ frequently feeding on the woody nightshade near Longniddry, where the plant is very plentiful. Stray caterpillars have been found on potatoes all over Berwickshire, but never in any quantity to do them harm. Mr Turnbull captured a female; it hybernated, but did not lay eggs. The perfect insects have a great partiality for light. One or two are taken about Lauder every year, at shop windows; one was found among stable manure; and another fell from a sheaf of corn, while it was being forked to the cart; others have secreted themselves in holes of walls. A great many of the pupæ

of the late larvæ hybernate, and these commonly do not show face till June. The hibernating moths of the previous year, if the weather is genial, may appear sooner than that.

DEILEPHILA GALII.—The only specimen that has been as yet met with in Lauderdale was captured by some boys from Blainslie School, during the summer, on the bank of the Leader, who consigned it to Mr Tait, the schoolmaster. The "Scottish Naturalist" records another for the Tweed district.

ZYGÆNA FILIPENDULÆ.—I found this moth in profusion at Longniddry, either resting on ragworts, or flying in the sunshine.

ARCTIA FULIGINOSA.—In Threepwood moss, a weird-looking spot, full of treacherous moss-holes, and with here and there low willow bushes, birches, and high tufts of heather. I have never seen the imago here, but plenty of the caterpillars. *Clostera reclusa* can be here obtained in the chrysalis state in willow bushes; the chrysalis is wrapped up in a wisp of leaves spun closely together. This is a good find. *Orgyia fascelina* has large settlements, farther back, in the neighbouring hill; the caterpillars far exceed in quantity the perfect progeny. *Orgyia pudibunda* also frequents that neighbourhood. The whole of the preceding insects have been got in Langmuir moss, with the addition of *Chelonia Plantaginis*, and I believe Mr Renton got *Euthemonia Russula* there.

BOMBYX RUBI.—This is another of our mountain gems. The larvæ sometimes swarm; but the moth, as formerly stated, is never in great strength of numbers. It begins to fly on the hill-sides at sunset, and you may congratulate yourself if you can capture five or six specimens.

SCODIONIA BELGIARIA.—This flies over our moors in July, a little later in the season than *Fidonia atomaria*. Mr Paterson, Dunse, made the first capture of this insect for Berwickshire.

CARSIA IMBUTATA (The Manchester Treble-Bar).—Mr Guthrie and Mr Turnbull, years since, saw this singularly rare insect in some profusion hanging at rest amongst the cranberry bogs of Canonbie, during a sunless day in July. A number more were got by disturbing the tufts of long grass. Their attention had been drawn to this locality by some competent observers who knew of their existence there.

NOTODONTA CAMELINA.—Occasionally found among the woods of Chapel House. Mr Darling captured one at rest on a beech tree at the side of the approach.

NOTODONTA DROMEDARIUS.—This beautiful species is of rare occurrence. However, one or two have been captured here, flying about hedgerows, although there is no connection between them and this insect, which manifests a liking to willows.

XYLOPHASIA HEPATICA.—Mr Shaw was the first to notice this in Berwickshire, on the banks of the Ale. Mr Turnbull, Lauder Gas Works, has made two captures of the species in Lauderdale.

AGROTIS TRITICI.—At Longniddry, near the same locality where *Colias Edusa* is found, this moth occurs in great profusion during the day, on ragworts. On these specimens the subcostal line is of a very white colour; the other markings are also very sharp and distinct, so that it cannot be mistaken for *T. aquilina*. It is rare in Berwickshire.

NOCTUA DAHLII.—This is an inhabitant of the Aiky wood, and is also very common among the natural oaks about Abbey St. Bathans in the beginning of September. It begins to fly in the gloaming.

ORTHOSIA SUSPECTA.—Very rare, but occasionally met with.

XANTHIA CERAGO.—When at Newhouses, Hawick, during holidays, I used to capture this insect not unfrequently, at the side of the Lough next the plantation.

DASYPOLIA TEMPLI.—Mr Turnbull captured at light from the end of October to the beginning of November, 1879, seven gorgeous specimens of this very rare moth. Hitherto only three had been found in the Tweed district.

EPUNDA LUTULENTA.—Mr Renton caught one with his net in Cleikhimin garden; but the best plan to find it is to sugar juniper bushes on Longcroft braes, and there it will be sure to resort to the bait.

AGRIOPIS APRILINA.—This is a very plentiful moth in Aiky wood. If sugaring is practised, from ten to twenty specimens may be got in a night, and along with them, the Flounced Chestnut and Brindled Green may be had also, on the same baits. The woods about the Abbey when sugared produce the same insects. The Berwickshire specimens of the *Hadena protea* are smaller, as a whole, than any of Newman's figures, and a little more dingy, but very neat. The food plant of the caterpillar is not given by Newman, but I anticipate that it is the low oaks that attract it.

PLUSIA INTERROGATIONIS.—First taken in Dogden Moss as recorded in the "Proceedings;" then about Drakemire, and lastly

on the Tippet Knowes, Lauder Common. The caterpillar is said to feed on stinging nettles, *Urtica dioica* (Stainton's Manual, i. p. 308) but Dr. Buchanan White, in correction of this, states that it always feeds on heather, and never on nettles. The figure in Newman's British Moths is much larger than our Berwickshire specimens.

CATOCALA NUPTA.—The specimen which I possess was taken in the Earlstoun old shooting range by some Blainslie boys, who handed it to Mr Tait. It had not previously been found in Lauderdale; but other two had been recorded for Berwickshire.

*Notes on Paper on Ashiesteel of 1878. By Miss RUSSELL
(See Club's Proceedings, Vol. VIII., pp. 436-441.)*

THE stone axe turned up with spindle-whorls at Ashiesteel, and now preserved there, on close inspection is not flint, but a very close smooth stone, I do not know exactly of what kind; it has rather a look of limestone; whether it may be regarded as an ancient case of imposition or not, this seems to account for its having broken without any wear.

The fragments of stone with cup-markings, or at least rude holes, which come under that head, of which six or seven are lying at the end of the box-garden at Ashiesteel, are chiefly from the sides of the road passing through the farm of Kilknowe, near Galashiels; some of them are comparatively small stones, and do not seem to be fragments of any thing larger, though one looks like part of a monolith. One stone, with a projecting piece left in the middle of a cup, is from the hillside on the other side of the Tweed from Ashiesteel.

On Ashiesteel hill there are several (large) stones with holes that appear to be arranged in rows, but are so rude as not to look artificial otherwise.

There is a large stone with two or three shallow cups, built into the yard wall near one door of the dairy. There is a similar one near Clovenfords, beside a gate on the road to Caddonfoot.

In the passage room in the house is a large heavy object, chipped out of white granite, which was found in ploughing the bank above the haughs of Clava, near Inverness. It might be a pestle, but is much too large to use by hand. It may be a portable tether for a cow; if the heavy part was buried in the ground, a small post would be left projecting, with a head which would keep a rope in its place.

October, 1880.

Record of Migration and Occurrence of Birds on the Borders in the order of their Dates for 1880. By JAMES HARDY.

In drawing up the following Report, my own remarks have been supplemented, as indicated by their initials, principally from the communications of Mr John Aitchison, Belford; Mr George Bolam, Berwick; Mr T. H. Gibb, Alnwick; Rev. J. F. Bigge, Stamfordham; Dr. Charles Stuart, Chirnside; Mr Robert Renton, Fans by Earlstoun, and others whose names are appended; as well as from the scattered intimations in the local newspapers, so far as I have access to them, which have for the most part been here arranged for future reference. This paper is only a branch of the larger inquiry prosecuted by Messrs Harvie-Brown and Cordeaux for the British Association of Science.

PEREGRINE FALCON (*Falco peregrinus*).—Jan. 14th, 1880, a Peregrine Falcon was trapped by the keeper at Edington. Observing a wood-pigeon newly killed near the place where the young pheasants were reared, he set a trap near the dead bird, and secured the very fine specimen, which was caught by a talon. It was a young bird.—*Dr. Stuart*. May 10th, 1879, an adult female engaged in preying on wood-pigeons was shot near Leitholm; and on Jan. 15th, 1880, a young male was shot in Hendersyde Park, near Kelso.—*A. Brotherton*. In the first week of December, a young female about six months old was shot by George Brown, farm-steward at Berrington Law, about three miles north of Lowick. It was a remarkably fine specimen, and weighed very heavy, turning the scales to $2\frac{1}{2}$ lbs. Its length from the beak to the tip of the tail was $19\frac{3}{4}$ inches, and the expanse of its wings $45\frac{1}{2}$ inches. It was purchased for the Berwick Museum (*Berwick Advertiser*, Dec. 10th). In the attempt to record it, it was converted into two species. On the Berwickshire coast the Peregrine built this year at Lumsdean, having nested at Fastcastle in the previous year. It was seen there June 17th. On Sept. 17th, 18th, 21st, and 24th, a female was watching the pigeons that frequent the rocks and caverns between Siccar and Greenheugh, Oldcambus; and on Dec. 17th it was there again. On the first occasion the martins and rock-pipits were attempting to mob it.

STARLING (*Sturnus vulgaris*).—Began to arrive in flocks at Fans, in the inland part of Berwickshire, Jan. 22nd.—*R. R.*

Most of the young had migrated from the upper part of Berwickshire before Oct. 31st. On Nov. 9th, nine or ten were present at Oldcambus; have been scarce throughout the winter; fewer nested here this summer, some of the old nesting resorts being deserted.—*J. H.* Alnwick, Nov. 4th. Large flocks of Starlings, mostly birds of the year, in immature plumage, feeding along the coast; also several Thrushes, Turnstones, Dotterels, and Purple Sandpipers.—*T. H. G.*

CURLEW (*Numenius arquata*).—Curlews were heard at Fans, Jan. 22nd. Three were seen on March 3rd. They breed in that neighbourhood.—*R. R.* At Oldcambus on Feb. 19th, there were 20 Curlews at the coast; on March 3rd, they began to utter their spring call. On March 9th, there were 30 at the sea-side, and were still present on March 25th, but had diminished to 6 or 7 on March 27th and 30th; and to one bird on April 17th. One appeared again on June 7th; but on the 9th about 12 arrived on the coast, and there was a great flock, Sept. 20th. By Dec. 16th, they had shifted their ground; one was heard on the 20th, but only two or three were left by the end of the year. In 1879, they left the coast on March 19th and 26th, and they began to arrive in numbers on the shores on July 17th, but the first had appeared on June 1st. Under Nov. 15th, Mr Gibb remarks:—"A large flight of birds appeared over the town of Alnwick about 10 o'clock at night; many of their number flew up and down Bondgate Street, attracted by the light of the gas-lamps. It was impossible, however, in the uncertain light, to make out to what species they belonged; but from their notes, there is no doubt that many, if not all, were members of the Plover family. On the following, night, the 16th, a migratory flock of Curlews also passed over the town, but judging from their cries, they were high in the air."

YELLOW-HAMMER (*Emberiza citrinella*).—"At Horsley, North Tyne, there is a newly-built nest of Yellow-hammers, containing two eggs."—(*Kelso Chronicle*, Jan. 23rd, 1880). The Editor questions the veracity of the statement, but the bird is not very observant of seasons. In the same paper for Sept. 17th, as an instance of late nesting, a Yellow-hammer's nest is said to have been found, enclosing two healthy birds, at the bridge over the railway at Lindean; and in that of Sept. 24th, another pair in the Hawick district is recorded as having reared four young birds at that late period. On August 9th, I observed a Yellow-

hammer carrying food for its young, which consisted of a mouthful of *Tipula oleracea*, the parent of the largest kind of "grub." About the same date, Yellow-hammers were persistent oat-eaters during the early ripening process; and they join the Greenfinch in shelling out the grain uncovered at seed-time.

RAVEN (*Corvus Corax*).—January 24th, one seen at Oldcambus during the snow. The sea-rocks near Siccar were an old breeding haunt of the birds; and they may hark back upon localities fancied by their forbears. In 1879 one was seen on Jan. 31st.

MISSEL THRUSH (*Turdus viscivorus*).—Song first heard from 4th to 7th Feb. Scarce all the season.

PIED WAGTAIL (*Motacilla Yarrelli*).—Oldcambus, Feb. 7th, one first seen (very early); one next arrived March 27th; and one was seen March 30th. April 29th, there was one at Dunglass; and on April 30th four or five were seen at Cove-shore hunting for food among the sea-weed. On August 6th the old ones were conducting little bands of young birds to the best feeding places. In 1879, arrivals were noted on March 18th, 19th, and 29th; and April 1st and 2nd. Sept. 22nd, young Wagtails appeared on the house-roofs, but had left on 24th. Last seen in 1879 on Oct. 2nd. Sept. 30th, seen on the roof of Lanercost Priory; and on Oct. 14th, at Berwick.—*J. H.* March 10th, arrived at Stamfordham.—*J. F. B.* On March 22nd at Fans.—*R. R.* When at Gilsland in September, I was told that an annual stream of migration passes over Brampton. This came first to be known on the occasion of a great cattle show and fair being held at the place, which caused a great amount of offal to accumulate, that attracted flies. Shortly after, a great number of Pied Wagtails alighted on the ground from a company on their journey southwards, and continued for some days pursuing the flies. Their passage has been noted since. This season the numbers were diminished.

RAZOR-BILL (*Alca Torda*).—Feb. 8th, 20th, 27th, several dead birds cast ashore at these dates.

LAPWING OR PEWIT (*Vanellus cristatus*).—Feb. 19th, appeared at Stamfordham.—*J. F. B.* March 3rd at Fans—*R. R.* March 7th, in a field near Cockburnspath.—July 15th, in turnip fields at Oldcambus. Aug. 21st, at coast; Aug. 31st, in straggling parties at sea-coast and turnips alternately. Continued most of the winter; but disappeared in Jan. and Feb., 1881, during the snowstorm. In 1879, Lapwings appeared Feb. 25, 26, Mar. 3rd, Mar. 8th, Mar. 17th; and had settled on the uplands, Mar. 19th. On March 28th, they were seen in a body returning to the hills.

GREY WAGTAIL (*Motacilla boarula*).—Oldcambus, Mar. 8th, a pair returned to an inland pond. May 25th, several new arrivals, along with a rush of migrants, consisting of Spotted Fly-catchers, Sedge Warblers, and Common Martins. In 1879, arrived on April 4th and 5th. Three arrived fresh as late as June 5th, two females and a male, and settled near a waterfall at Redheugh.

WATER-HEN (*Gallinula chloropus*).—March 9th, it returned to its breeding-pools. In 1879, it returned on March 11th; but left, and returned on April 2nd. At Lowick, I am told, that during the last winter (1880-1), a pair frequented a cottage garden, and became so familiar as occasionally to take refuge in the porch. Dr Stuart of date 11th Feb., 1881, notes that during the severest part of the winter, "Water-hens were easily caught in the hand. Coming home one day, when at Broadhaugh, I observed one fly and light on the top of a wall, right in front of the window of a cottage, where it allowed me to put my hands on it."

CORMORANT (*Phalacrocorax Carbo*).—Had begun to disperse about Mar. 9th, when there were 6 on their favourite perch, the Scart Rock near Siccar. There was only one there on Mar. 18th; and 2 on Mar. 25th (these had the white patch on their thighs); 3 were seen on Mar. 26th; and only one on Mar. 27th and 30th. Owing to the coast salmon fishery interfering with their privacy, they were not again visible till Aug. 9th and 31st, when only a pair had returned. Their number has been limited in winter and spring 1881. In 1879, the latest date of their stay, was April 11.

HERON (*Ardea cinerea*).—At Alnwick, March 15, Mr Gibb observed several Herons passing westwards as if towards heronries. They were high in the air, and seemingly bent on a long journey. —At Oldcambus there were still three on the coast, on April 17th; on July 15th, there were 7 or 8; on Aug. 6th, there were 16, and on Aug. 31, there were 12.—At Murton of date 18th Oct., Mr Nicholson informs me, there were a number of Herons flying about, and he frequently could count from 6 to 14 in a day.

CHIEF-CHAFF (*Sylvia rufa*).—March 20th, at Belford, very early; its usual time of arrival is from the 27th to 31st March; rarely found after the end of September, or first week of October. —J.A. April 4th, at Berwick; generally the first of the Warblers to arrive.—G.B.

REDSHANK, (*Totanus Calidris*).—Had dispersed before Mar. 18, when only one was heard; a pair remained on March 20th,—

June 24th, a pair had returned; and on July 17th, 6 or 7 frequented the coast; on Aug. 31st, a small close-packed flock was noticed. In 1879, had left before April 1st, and had returned on July 17th. Mr Kelly writes that two Redshanks, during the summer haunted the upper reaches of the Leader Water. They hankered about the river, and ran races on the sands, as if they were going to breed, but although they stayed three months, they still continued single; at length one was shot, and the other deserted the locality.

WILD DUCK (*Anas Boschas*).—Continued on the coast till Mar. 22nd; but on Mar. 27th, the number was greatly diminished. In 1879, they left on Mar. 26th; the first pair returned, Sept. 18th. One re-appeared at sea, Sept. 25th, 1880. On Oct. 16th, there were 30; and on Nov. 4th, there were several distinct bands. Nov. 15th, hard frost following a heavy rain, when fully 100 ducks appeared at sea; Nov. 23rd, ducks were absent; in Dec. they had nearly deserted this part of the coast. On Jan. 5th, 1881, they had nearly all disappeared. The newspapers stated that while wild fowl were numerous at Fenham Flats during the winter, there were few wild ducks.

GREBE, GREAT CRESTED (*Podiceps cristatus*).—A party of 12 near Siccar point were seen for the last time, March 22nd. They re-appeared to the number of 15, on Dec. 20th. Of late years they have been noted as annual winter visitants. They were very numerous in 1879, when they arrived on Dec. 5th; and some had lingered in spring till May 3rd, when three birds were seen. In the Index of last vol. of "Proceedings," I find that references to the Red-necked and Slavonian Grebes have been omitted. They are mentioned at pp. 54, 188, 502, 530. One of *Podiceps auritus* was captured at Cramlington, Feb. 11, 1881. I have not yet detected any of the Common Coots (*Fulica atra*) in the sea, to which, in this district during the autumn, they regularly descend from the inland ponds, following the burn courses, and returning in the beginning of March; unless it was on Dec. 27, when what looked to be an entirely black duck, appeared among the Grebes, which chased them when they approached it, and it did not dive so much.

YELLOW WAGTAIL (*Motacilla flava*).—March 25th, observed three Yellow Wagtails on a newly-sown field, at a short distance from Alnwick. As the year advances, the vicinage of the Aln is a favourite resort of these birds.—*T. H. G.*

THRUSH (*Turdus musicus*).—March 25th, a few birds are scattered here and there: there has been no increase during the season. About Sept. 4th, four or five thrushes frequented the turnip fields; but they were very scarce in the latter months of the year; and disappeared entirely in Jan. and Feb., 1881. Blackbirds have not so entirely deserted as the Thrushes. At Murton, about 18th Oct., Mr Nicholson writes: Blackbirds and Thrushes were numerous, generally to be found among the turnips. Writing from Dunse, March 25th, 1881, Mr Robt. Waite says, "in Jan. I saw Thrushes in our market-place, and afterwards in the garden, but they have now disappeared."

WATER-OUZEL (*Cinclus aquaticus*).—Pairing, March 27th; very scarce in Jan. and Feb., 1881; re-appeared in limited numbers only in March, when the streams were freed of ice and snow.

ROCK-PIPIT (*Anthus petrosus*).—An assemblage near Siccar, March 30th, previous to dispersal. Again Aug. 16th, a large number were congregated at an inland well-strand, but no such convocation was again witnessed. Thinly scattered during winter; numerous in March, 1881, among rocks surrounding Dunbar harbour. There are always swarms of minute black flies of the genus *Limosina*, bred in decaying sea-weed, &c., which in warm days in spring, thickly powder the rocks by resting on them. These constitute part of their food, and are picked up with much alacrity. In spring and winter these Pipits resort to the sheep-folds, and recently ploughed fields at some distance inland, in quest of insect food. In 1879, April 25th, a body of from 23 to 30 were assembled on the sea-banks previous to dispersion, going northwards; on Dec. 9th the Sea-pipits had mostly left the coast.

WHEAT-EAR (*Saxicola *Enanthe**).—Appeared on sea-coast near Oldcambus, March 25th; but absent, Mar. 27. On Mar. 29th, a small band of 7 or 8 arrived; but some were visible for some time afterwards. April 17th, a few were seen more inland. They were at Cockburnspath Cove on April 30th. They breed on the coasts here, but these were migrants. They were again noted at the coast on July 15th, 17th, 20th, and 22nd, as if strangers. On August 31st, young birds were still here; and on Sept. 2nd, 3 or 4 finely feathered birds were at the coast; and on Sept. 17th, there were 3 more inland. Both in coming and going there appears to be no unanimous concert among them. In 1879, they arrived on April 5th and 7th, and on subsequent dates; and even as late as May 22nd and 26th, along with a great rush of migrants

comprising Flycatchers, Willow Wrens, Wood Warblers, Red-starts, White-throats, and Sedge-Warblers, and did not leave till the 29th. They returned to the coast in 1879 on August 30th. Oct. 14th, seen at Berwick. From Mr George Bolam's notes, in 1879, the Wheat-ear appeared at Berwick April 11th, and left in the end of September; and in 1880, it appeared in the 1st week in April, and disappeared on the third week of October; being very late in going in autumn, 1880. At Belford, in 1880, according to Mr John Aitchison, it appeared on March 29th, about the usual time; in 1879 it was late, not before 10th of April; in 1879, arrived 1st April; and in 1878, March 29th. On March 26th, Mr Gibb saw a solitary Wheat-Ear on the slopes of the platform of Dunstanborough Castle. On Sept. 25th, he observed large numbers of Wheat-Ears on the coast near Alnwick, making ready for their departure. They had left before Oct. 10th, when he revisited the locality and saw none. Called "Stane-chackers" by the Coldingham fishermen.

WHIN-CHAT (*Saxicola Rubetra*).—April 2nd, arrived at Belford about the usual time; in 1879, appeared April 20th.—*J. A.* April 29th, a pair on some furze on Alnwick moor, shewing their usual predilection for topmost sprays.—*T. H. G.* August 6th, a brood of young birds, fully fledged, in a ferny spot on the steep sea-banks east from Redheugh. In 1879, May 2nd, arrived at Cockburnspath, and May 12th, at Pease Bridge. These birds were once much more numerous on the skirts of the moors in this district, but cultivation has now driven this and the next species into the back wastes. In 1857, there were several in the upper part of Edmondsden, or Edmersdean.

STONE-CHAT (*Saxicola rubicola*).—April 2nd, at Belford, about the usual time.—*J. A.* April 12th, at Stamfordham.—*J. F. B.* April 30th, Cockburnspath Cove. Last seen in 1879 on Dec. 4th. Used a few years ago to build in Oldcambus dean, and at the foot of the Peaseburn. It still frequents Ewieside, Penmanshiel moor, and the heights above Redheugh.

RED-START (*Phenicura ruticilla*).—April 5th, a pair, male and female, in an old moss-covered wall near Bolton.—*T. H. G.* May 2nd, Oldcambus. In 1879, arrived May 22nd.—*J. H.* May 9th, Stamfordham.—*J. F. B.* At Berwick, Mr G. Bolam saw Red-starts in 1879, on May 5th, and in 1880, on May 7th. It departs in August. These arrivals he considers very late, but he had not much chance of seeing the birds as they arrived.

GUILLEMOT (*Uria Troile*).—April 7th, observed a large number of Guillemots on the adjacent coast (Alnwick) heading for the Farnes—a favourite breeding station.—*T. H. G.*

SEDGE WARBLER (*Salicaria Phragmitis*).—Heard at Belford, April 10th, 1880, (early); seen and heard April 12th, in 1879 arrived April 30th.—*J. A.* May 25th, at Oldcambus, arriving along with the Spotted Flycatcher, its companion, in 1879, and an accession of Martins. In 1879, arrived May 22nd and 26th.—*J. H.* April 30th, among the aquatic plants that luxuriate on the marshy grounds contiguous to Alnmouth, three Sedge Warblers were visible, and occasionally a fairly good view could be had of them, which is not always attainable, for the bird is an adept at concealment.—*T. H. G.*

WILLOW WARBLER (*Sylvia trochilus*).—April 12th, at Belford about its usual time; in 1879, it did not arrive till 22nd April.—*J. A.* At Berwick, arrived 1st week in April, departed 1st week in October; usually comes and goes early in April and October. *G. B.* At Alnwick, April 26th, two Willow Wrens were seen flitting from branch to branch in their usual active way, uttering their plaintive notes.—*T. H. G.* April 18th, at Oldcambus, after stormy weather, among black currant bushes; April 23rd and 24th, singing sweetly in the woods. April 29th, at Dunglass. May 6th, generally diffused at Woodhall, near Dunbar. On Aug. 11th, it was still present in Bowshiel Dean, but on the 13th it and all the other warblers had left the Pease dean. On Aug. 22nd, seen near the public road at Cockburnspath Tower; and again on Sept. 5th. Not at Tynninghame on Sept. 6th. On Sept. 2nd, 3rd, and 4th, a family party of four or five, along with two Blue Tits, five or six Thrushes, as many Blackbirds, a few Chaffinches and Hedge-Sparrows, and a Whitethroat, had associated on the borders of a turnip field; but they were not observed any later. In 1879, it arrived April 28th and 29th, and was generally diffused May 11th, and was last seen August 15th.

SAND MARTIN (*Hirundo riparia*).—April 6th, a pair at Belford, April 10th, several; in 1879, appeared April 20.—*J. A.* April 18th, at Rothbury.—(*Kelso Chron.*) April 19th, at Berwick.—*G. B.* April 23rd, sea-coast, Oldcambus. In 1879, arrived on April 25th.—April 26th, at Stamfordham.—*J. F. B.* Sept. 15th: "A very large number of Sand Martins were congregated on the banks of the Aln on the evening of this day. They were skimming and careering about in the liveliest fashion, and kept dipping

in the water so perseveringly, that the effect produced was like a shower of rain. The vicinage of the Aln is nowhere thickly peopled by them, and I have no doubt the great muster was the prelude to their speedy departure for the sunny south, and in all probability they took their flight that very night, for it was the last sight I had of them for the year; although on the following and many a succeeding day, I chanced to be near their meeting place."—*T.H.G.*—May 20th, 1880, at Belford, Beaumont water; May 24th, in 1879.—*Dr. Robson Scott.*

SWALLOW (*Hirundo rustica*).—April 15th, at Belford, thin; plentiful on 20th; in 1879, appeared April 20th.—*J.A.*—At Berwick in 1879, arrived April 25th, departed Nov. 6th; in 1880, arrived April 23rd, departed Nov. 14th; very late in departing in 1879, all over the country.—*G.B.*—At Rothbury, April 18th, several were counted in the midst of a flock of Sand Martins; in 1879, they appeared on April 29th. (*Kelso Chron.*)—Berwick, arrived April 23rd; at Abbey St. Bathans, April 24th; at Elsdon, April 20th.—(*Ber. Adv.*). At Stamfordham, April 20th, arrived. Sept. 21st, bulk of the Swallows left; Oct. 10th, two seen.—*J.F.B.* At Brampton, Oct. 16th, last seen. They were circling round the church for several days previously.—*Geo. Parkin.* At Fans, Earlstoun, April 20th, first seen; Oct. 11th, saw one flying along with two Bats, about 9 o'clock in the morning, the sun shining bright.—*R.R.* At East Linton, first seen, 23rd April, a week behind their average arrival, and disappeared on the 10th Oct., seven days before their average time of departure. At Musselburgh, April 18th, a considerable number were seen by the river; which was reckoned by the observer to be nearly 10 days or a fortnight before the usual time.—(*Scotsman*). At Kelso, April 21st, one seen, among a score of Martins.—(*Kelso Chron.*) A correspondent remarks that the 26th April, is the usual time of arrival near Kelso, but this year it was far into May before they made their appearance.—(*Ib.* Oct. 22nd). The following are the dates of the arrival of the Swallows at Dunse for the last five years, viz:—4th May, 1876; 6th May, 1877; 21st April, 1878; 26th April, 1879; 30th April, 1880.—(*Ber. News*, May 4th).—Mr Watson writes that in 1880, they left Dunse again about May 6th, owing to the inclemency of the weather.—At Chirnside, Dr. Stuart observed that on April 23rd, Swallows were first seen at Allanton Bridge; on 24th, plenty of swallows, weather windy and cold; 26th, Swallows absent; snow on

Cheviot in the morning and very cold. Principal body of Swallows left early in Sept., before the great blast of wind and rain on the 15th Sept; stragglers and young birds remained to Oct. —At Alnwick, Mr Gibb, noted that the Chimney Swallow was not observed until the 26th April, when a small company of six arrived.—At Oldcambus, there was one on the coast, April 17th; none had settled, May 2nd; began to take up residence, May 12th, when in the early morning they were seen hawking over the sheep in the fields, as they came to be fed. May 17th, a pair on the Sea-banks; May 22nd, numerous in East Lothian. In 1879, Swallows arrived, April 25th. Sept. 25th, 1880, had left the steading. Seen Sept. 18th and 21st. Sept. 22nd, numerous at Siccar mixed with Martins. Sept. 25th, seven or eight returned to the steading. Sept. 23rd, still Swallows at Renton. Sept. 26th, seen at Cockburnspath Tower, and none later. Sept. 29th and 30th, there were Swallows at Naworth and Willowford, but none about Hexham; and on Oct. 3rd, they continued at Parkend near Carlisle. Oct 4th, was a hard frost accompanied with snow, and the Swallows assembled to depart on the roof of Marchmont House, which Mr Loney says they left about the 6th of the month. —At Kelso, of date Sept. 10th, the Swallows which during the past fortnight were seen collected in large flocks, had not been observed. But they had only left for a few days' holiday. On the 14th they were again seen in large numbers; and on the 15th and 16th they were skimming in hundreds over the seething waters of the Tweed. On the 24th they had again disappeared from the Kelso district.—(*Kelso Chron.*, Sept. 10th and 17th). Of date Oct. 15th, after being absent for three weeks, again returned, and in Kelso and the country round, their presence had that week been conspicuous. They had assembled in flocks, and it seemed as if they were making preparations for their final departure. On Oct. 10th, four were seen on the telegraph wire at Edenside Road; and on the 17th Oct., a good many were flying about. Nov. 4th, a Swallow was seen at Wooden near Eckford. —(*Ib.* Oct. 15th, 22nd, Nov. 12th). In 1880, May 7th, arrived at Belford, Beaumont water; in 1879, May 15th.—(*Dr Robson Scott*). In a brood of Swallows hatched at Middlegill, near Langholm, in 1880, one proved to be white, and its peculiar colour attracted a good deal of attention.—(*Ib.* Sept. 24th). In vol. vi. p. 428 of the Club's Proc., I recorded the occurrence of two white House Martins (*Hirundo urbica*), which were bred in 1872, in the uppermost story of Wooler Mill,

MARTIN (*Hirundo urbana*).—At Belford, April 15th, a few appeared; they were plentiful on the 20th.—*J. A.* At Berwick, Mr Bolam saw the last House Martin, Oct. 14th. He saw the first in 1879 on May 3rd. Mr Gibb, on April 25th, saw a few Martins skimming close to the ground in a warm sheltered spot near Alnwick Castle. The Martin at Alnwick usually makes its appearance ten or twelve days earlier than the Swallow.—At Kelso, April 19th, a small detachment of Martins appeared at Kelso Bridge; and there were more on the 21st.—(*Kelso Chron.* April 23rd). At Oldcambus, May 15th, a pair returned to the sea-caverns and cliffs. On May 17th, there were two pairs; on May 20th, they were numerous. May 22nd, seen at Innerwick. On May 25th, with milder weather, after N. and N.W. gales, there was a large assemblage of Martins at the coast along with Sand Martins and Swallows. September 17th and 18th, Martins were numerous at their breeding places near Siccar Point. On 19th and 20th, they were still at Stockbridge. Sept. 23rd, still had young at Horsley. Sept. 20th, 21st, and 22nd, Martins and Swallows mingled were very numerous at Siccar. There were some young still being fed in the nest. On Sept. 24th, there was only a pair at Siccar. On Sept. 26th, seven were present; and on Sept. 27th, only one lingered behind. In 1879, Martins arrived May 5th, and were last seen October 3rd. In 1880, May 20th, arrived at Belford, Beaumont water; in 1879, May 24th.—*Dr Robson Scott.*

SWIFT (*Cypselus apus*).—At Belford, May 12th, a pair; scarce this season, and rather late; in 1879, appeared May 17th; and left 25th August.—*J. A.* At Stamfordham, May 16th.—*J. F. B.* At Oldcambus, May 16th; on the East Lothian Lammermoors, May 22nd. In 1879, Swifts arrived May 22nd, and were last seen Sept. 12th.—*J. H.* At Berwick, in 1879, arrived April 30th; departed Sept. 4th; in 1880, first week in May, departed August 16th.—*G. B.* At Kelso, April 21st, one bird among other *Hirundinidæ* (*Kelso Chron.*); in full numbers, May 14th.—(*Ib.*) At Alnwick, May 27th, three appeared, flying and screaming above the town.—*T. H. G.*

RING OUZEL (*Turdus torquatus*).—In 1879, arrived April 15th; not seen in 1880.

GREATER WHITETHROAT (*Curruca cinerea*).—At Stamfordham, April 17th.—*J. F. B.* At Belford, May 2nd, latish.—*J. A.* April 29th, near Alnwick, in a quickset hedge.—*T. H. G.* At

Berwick, left in the end of Oct.; was late in departing in 1880; seen in various places till the end of October.—*G. B.*—At Oldcambus, May 13th, in a dean among furze; May 16th, general in hedges; August 6th, haunts the garden; August 7th, in post-road hedges; August 20th and 31st, still one in garden. Sept. 2nd, in turnip field; Sept. 7th, one in garden at currant bushes, and again on the 19th, which was its latest visit. In 1879, arrived in succession on May 21st, 22nd, and 26th; last seen Aug. 15th.

GARDEN WARBLER (*Curruca hortensis*).—Belford, April 23rd, latish.—*John Aitchison*.

PUFFIN (*Fratercula Arctica*).—April 23rd, several Puffins in the sea off Newton-by-the-Sea.—*T. H. G.*

GRASSHOPPER WARBLER (*Salicaria Locustella*).—Belford, April 29th, rather a rare bird in that vicinity.—*J. A.*—A false impression prevails that it is a bird of the South of England. I have known it at Penmanshiel since I was a boy. I find that on May 23rd, 1837, I heard it among young trees in the Pease dean. Near Newcastle I used to hear it on the retired banks of the Derwent, opposite Winlaton Mill; and it has a retreat at Broadstruther, among the lower Cheviots. A correspondence in the *Scotsman* brings out a number of new localities. A favourite haunt is the beautifully wooded and romantic spot round Keilder Castle, on the banks and near the source of the North Tyne. It usually arrives there in the early part of June, though sometimes in May, and may be heard any time from morn till dark. The writer compares its note to the winding up of a watch. *T. C.* heard it at 9.30 p.m. in the middle of May, about a mile north of Haddington. He compares the sound to a small pea-whistle. *H. M. Lornie* writing from Kirkcaldy, July 1st, says it can be seen and heard any time after 8 or 9 o'clock p.m. at the Mill Dam woods, or in the grounds at Raith. It has also been heard about a mile north of Edinburgh in June; and in the same month at the canal side near Falkirk. It has also occurred in Perthshire in 1880.

KITTIWAKE, (*Larus tridactylus*).—April 28th, quite a large company of Kittiwakes on the coast between Newton and Boulmer.—*T. H. G.*

WOOD WREN (*Sylvia sylvicola*).—Berwick, April 30th. Always a fortnight or three weeks behind the Willow Wren.—*G. B.* I did not observe it in the Pease dean, till late in summer; in 1879, arrived May 12th and 22nd.

LANDRAIL OR CORNRAKE (*Orex pratensis*).—At Alnwick, May 1st, I heard the first Landrail, and lured it within a few feet of me, by the artificial call note.—*T.H.G.* At Dunse, May 1st.—(*Ber. News*). May 3rd.—*Mr Watson*. Stamfordham, May 6th.—*J.F.B.* At Berwick, May 6th in 1879, April 28th in 1880. Corncrakes were very late in the year 1879.—*G.B.* At Kelso, heard in the fields, April 23rd.—(*Kelso Chron*). A Landrail was shot at Mellerstain, 21st Sept.—(*ib.*) Late in leaving Scotland in 1880.

CUCKOO (*Cuculus canorus*).—At Stamfordham, April 26th.—*J.F.B.* At Belford, May 3rd, scarce.—*J.A.* At Fans, first heard, May 3rd.—*R.R.* At Berwick, in 1879, arrived April 26th; in 1880 last seen, Aug. 25th, the young often remain till Sept.—*G.B.* At Alnwick, May 3rd, in a brake at Rugley Wood, I saw two birds on the same day, one on the outlook for caterpillars, the other on the wing. On July 26th, I observed an old Cuckoo in Hulne Park, a later date than I had previously noticed. The old birds, particularly the males, usually leave in the first week in July, and those birds that are seen after that date, may be set down either as unusual or unwilling sojourners. The young of the year remain much longer; indeed I have more than once seen them as late as October.—*T. H. Gibb*. Frequents gardens at Lowick to feed on the gooseberry caterpillar; does the same at Pease Mill, Berwickshire. In 1879, first seen May 11th.—In 1880, arrived at Belford, Beaumont water, May 7th; in 1879, May 8th.—*Dr. Robson Scott*.

WOODCOCK (*Scolopax rusticola*).—In Bowshiel dean, the Woodcocks did not leave till the first week in May, which was late. They arrived at Aikieside in the Pease dean woods, Nov. 2nd, which is accounted early.—*J.H.* Oct. 20th, one was flushed at Blackburn in Chirnside parish.—*Dr. Charles Stuart*. July 2nd, discovered in Hulne Park a Woodcock's nest with three eggs. Sept. 26th, flushed a Woodcock on Chatton Sandyford moors, but this no doubt was a bird that had summered with us.—*T.H.G.*

SOLAN GOOSE (*Sula Bassana*).—May 3rd, 4th, 5th, 1879, Solans commenced passing and returning down the Firth to the open sea. The salmon fishermen expect good catches when they commence diving along the coast-line.

MOOR PIPIT (*Anthus pratensis*).—On the Moors above Highchesters, May 4th.—Sept. 6th, there were a few on the coast between Dunbar and Tynninghame. Nov. 12th, a pair seen at a

well-strand in Oldcambus dean. Mostly migratory in this district. In 1879, they were on the moors, as if just arriving, on April 18th.

LESSER WHITETHROAT (*Curruca sylvicola*).—Belford, May 5th, late.—*J. A.*

COMMON SANDPIPER (*Totanus hypoleucos*).—May 5th, observed a Common Sandpiper on the banks of the river Aln. The Sandpipers usually arrive in pairs, but this bird was mateless, and continued so for several days, when two more birds arrived. The trio then fraternised for a considerable time, but how their friendship ended, I cannot say.—*T. H. Gibb.*—At Berwick in 1879, arrived May 6th, departed middle of Sept.; in 1880, arrived May 5th, departed end of Sept.—*G. B.* In 1879, May 14th, at Houndwood; June 3rd, near Thurston, E. L. both new arrivals.

BLACK-CAP WARBLER (*Curruca atricapilla*).—May 6th, I heard a Black-cap in the North Cawledge Wood, but it was not then in full song.—*T. H. G.*—In the Pease dean, the Black-cap was late. There were none heard on May 16th, but they were present on the 22nd. In 1849, they were first heard May 12th and 22nd.

SANDWICH TERN (*Sterna Boysi*).—May 12th, a small company of Sandwich Terns off Craster, bound no doubt for the Farnes, where the shingle of the islets offers them an advantageous nesting place.—*T. H. G.*

TREE-PIPIIT (*Anthus arboreus*).—May 14th 1879, near Houndwood; not seen in Pease dean for two years.

NIGHT-JAR (*Caprimulgus Europæus*).—At Belford, first seen May 15th. In 1877, appeared May 10th; in 1878, May 13th; and in 1879, May 17th.—*J. A.*—August 27th, flushed two Night-Jars on the moors of Chatton Sandyford, where every year a few breed.—*T. H. G.*

DOTTEREL (*Charadrius morinellus*).—In 1879, May 15th, appeared on Redheugh hill, and continued on 19th; not observed in 1880.

SPOTTED FLYCATCHER (*Muscicapa grisola*).—At Oldcambus, May 25th, numerous in the dean, and at a natural wood called the Oak brae, new arrivals. Last noticed Sept. 5th. In 1879, May 22nd and 26th, they arrived in great numbers along with numerous other migrants.—*J. H.* At Alnwick, May 28th, there were several Spotted Flycatchers among the alders that skirt the Aln, intent on capturing insects.—*T. H. G.* At Chirnside, the summer visitors left early. I saw none after August, no White-throats, Flycatchers, or Willow Wrens.—*Dr Stuart.*

BLACK-HEADED GULL (*Larus ridibundus*).—Oldcambus, June 11th, two returned to sea, resting on the poles of the salmon nets, as they are wont to do on piles in inland lakes. More appeared on July 15th, 16th, and 17th, being then in considerable numbers. By the end of the season only one or two remained. They are more numerous on the coast of East Lothian than here. In 1879, Black-headed Gulls were observed on the coast on January 22nd; and occasional birds were still present on February 8th. In that year they were first seen on their return to the coast on July 19th. On August 15th, they were hawking in the air and snapping at the Crane-flies (*Tipula oleracea*) which were floating in the air in numbers. On June 25th and 26th, 1880, Sir Walter Elliot observed inland at Wolfelee, remarkable flights of Sea Gulls (*Larus canus*). On June 9th, 1879, I saw the same thing here after dusk, the birds, I believe, were attracted to feed on slugs.

GREEN SANDPIPER (*Totanus ochropus*).—A single bird haunted for a few days some pools in the dean at Oldcambus, on July 17th, 1879, and subsequent days; not seen in 1880.

SANDERLING (*Calidris arenaria*).—August 3rd, shot two Sanderlings on the coast near Alnwick, not yet attired in their full winter dress, but were probably young birds of the year.—*T. H. G.*

GREAT SNIPE (*Scolopax major*).—"I have the record of one shot at Barmoor Castle, Northumberland, on 21st Sept."—*Mr J. A. Harvie Brown*, Proc. of Nat. Hist. Soc. of Glasgow, vol. iv. p. 315.

WILD GEESE.—**GREY-LAG** (*Anser ferus*) at Berwick, arrived Sept. 26th, 1879, departed February 14th, 1880; and arrived Sept. 15th, 1880. **BRENT GEESE** (*Anser torquatus*) usually come later, and remain till about March.—*G. B.* November 16th, a large flock of Grey-lag Geese (?) in the form of a V passed over Alnwick to the south, cackling vociferously. These birds sojourn with us, now and again, selecting generally the largest stubble or grain fields to alight in, to the centres of which they are prone to confine themselves, with their fuglemen always on the alert.—*T. H. G.* *Species Unknown*.—At Oldcambus, a small returning band seen, Feb. 8th, 1880. On March 27th, a great flight rose from the moors behind Penmanshiel and Howpark, where they continued eating much grass up to near April 24th. In the autumn, the first seen Oct. 11th; on Oct. 30th, wild geese were passing, but did not rest. April 7th and 15th, 1879, very large flocks of Wild Geese appeared. On the uplands they continued three weeks in April. They were first heard in returning on

OCT. 3rd.—OCT. 4th, 1880, a large flock of Wild Geese passed along the coast from south to north off the mouth of the Wear. Before Oct. 8th, two large flocks flying southwards, passed over Hawick, late at night (*Kelso Chron.*, Oct. 8th). A pair of BRENT GEESE were shot on the Oxnam water, near Millheugh, about Feb. 4th, 1881, in a snow storm. Of this I have a notice from Mr Valentine Knight. "I have been told," he says, "that these geese have been in marvellous numbers this last winter near Holy Island. No doubt the two birds shot in the Oxnam had simply lost themselves in the storm; it was during a heavy fall of snow attended by a strong gale of wind, that they were found there, from what I could learn."—In East Lothian, this is called the "Wear Goose," which appears to be the same word as the "Horra Goose" of Shetland, applied to this species.

HOOPOE (*Upupa Epops*).—Sept. 15th, a Hoopoe was killed at Chester House farm, about a mile from Acklington Station. It was a very fine specimen of a mature bird. I am unable to find out the name of the gentleman who shot it, as he was a stranger.—*C. F. McCabe, Thirston House, Felton*, Feb. 19th, 1881.—Mr Parkin informs me that a Hoopoe was shot near Wakefield in autumn.

TURTLE DOVE (*Columba Turtur*).—Before Sept. 17th, a young male Turtle Dove was shot at Lamberton by Mr James Mein. It was shot on the main road on a very stormy and tempestuous day, and was apparently quite fatigued, and could with great difficulty fly. In all probability it had been bred in Scotland or Northumberland. An old bird was shot shortly after near Velvet Hall Station.

FIELDFARE (*Turdus pilaris*).—Belford, Sept. 25th and 27th respectively, two small flocks, very early arrivals; very few seen since.—*J. A.* Oct. 31st, Fieldfares seen at Bowshiel. Nov. 9th, nine or ten appeared at Oldcambus. They were extremely scarce throughout the winter. One continued throughout the storms of Jan. and Feb., 1881, and fed among the sheep on chips of turnips. In 1879, arrived Nov. 13th.—*J. H.* In Lauderdale, both they and the Redwings had come and gone about the end of October.—*A. Kelly.* At Berwick, arrived in 1879 on Oct. 27th; and in 1880, on Oct. 28th; and there they usually depart about the beginning of May or end of April.—*G. B.* Alnwick, Oct. 2nd, "observed the arrival of a company of Fieldfares from the north, composed of about one hundred individuals. When first seen

they were hurrying along with a strong and rapid flight high up in the air, bent to all appearance on a prolonged journey southwards, uttering their well known flight-notes; but on passing a secluded wood bounding the river Aln, they wheeled sharply round, and commenced a series of rapid but graceful evolutions, nearing in each one of them the wood, which evidently attracted their attention, with a view to a night's rendezvous. Round and round the trees they flew, chattering and screaming as only Fieldfares can, and then dashed into the trees amongst their topmost branches; not yet, however, to alight, but more, as I took it, to scan yet closer their contemplated retreat; for they quickly reappeared to continue their circular movements, but at a much lower altitude, till eventually, with much clamour, they settled as if for the night. The cessation of their merry pipings and lively gyrations left quite a blank and silence on the scene, but this was not long to continue, for a Carrion Crow chanced to come that way, and sounding his hoarse croak, alighted among them. Its presence proved so distasteful that they left precipitately, and resuming their southward journey, were soon lost in the grey distance."—*T. H. Gibb*. Mr Robert Waite, at Dunse, has not seen the Fieldfare, Redwing, nor Missel-thrush, in winter 1880-81.

REDWING (*Turdus Iliacus*).—At Belford, Sept. 25th and 27th, a few Redwings accompanied the Fieldfares. Other small flocks of Redwings were seen, Oct. 10th and 13th.—*J. A.* Sept. 30th, the Redwings had arrived at Brampton, but not the Fieldfares.—*Geo. Parkin*. At Berwick in 1879, Redwings departed April 29th, and arrived Oct. 27th; in 1880, they arrived Oct. 11th.—*G. B.* Mr Brotherston, writing from Kelso, Nov. 29th, 1880, says, "a rather unusual thing here is, that we have more Redwings than Fieldfares." Mr Gibb, remarking on birds attracted in their migration by lights at night, states that "the Lighthouse keepers on the Farne Islands often reap a rich reward by the hapless birds, which in their autumnal movements are lured to destruction by the dazzling blaze of that light, which is, at one and the same time, a warning beacon to passing mariners, but a false mark to the feathered denizens of the air. I have heard of the keeper of the Longstone having filled a clothes basket with the bodies of Thrushes, Fieldfares, Redwings, and other birds that have been dashed to death during the night against the lantern of the lighthouse, and I have no reason to doubt the assertion,"

GREY-BACKED CROW (*Corvus Cornix*).—At Berwick, in 1879, departed April 18th; arrived August 18th; in 1880, departed April 29th, arrived Oct. 15th. August 18th was very early, and possibly the birds may have bred here. October is the usual time. The entry in my note book is—"1879, Aug. 18th: saw 2 Grey-backed Crows, very patchy in colour, and sorely in the moult—they did not seem to be properly coloured, but this might simply have been from their moulting condition—at any rate, this is remarkably early for 'Hoodies,' and I do not think that these could have travelled far, but had possibly been bred in the country."—*G. B.* At Bowshiel, Nov. 5th, first seen. In 1879, seen April 24th, and arrived Oct. 2nd.—*J. H.* Sea coast, Alnwick, Nov. 2nd, 1880, four Hooded Crows busy turning "sea-ware" with their bills.—*T. H. G.*

SEA-PIE (*Hematopus ostralegus*).—In 1879, October 7th, a flock arrived, which continued till the 16th. Not seen in 1880.

SNOW-FLAKE (*Plectrophanes nivalis*).—The newspapers record a flock of birds, nearly white, as having been seen on the hills north of Matfen on Jan. 3rd, 1880. In Northumberland and Roxburghshire, the Snow-flake is called the "Cock of the North;" but the Berwickshire and East Lothian "Cock of the North" is the male Brambling (*Fringilla Montifringilla*). The people there well know the "Snow-Flek," which, alluding to its speckled plumage, is more correct than "Snow-flake." On Oct. 18th, a Snow-flake, in a heavy storm of wind and rain, appeared as if just landed on the post road near Thorntonloch, E. L. It was picking at some horse-droppings. The weather continued stormy till Oct. 30th, wind N. and N.E., when a very large flock of Snow-flakes arrived at Penmanshiel, on the lea-fields, but left after resting a few days, if rest they did, for they flit about like evil spirits which have no home. They were again very numerous there on Nov. 30th, flying wildly. At Oldcambus there were chance birds on Dec. 20th and 29th; and three or four on Jan. 7th, 1881. On Nov. 15th, Mr Gibb saw Snow Buntings in considerable flocks on Alnwick Moor, which were very restless.—Mr Kelly of date Nov. 30th, says that on the 14th, he went for a mile or two through very deep snow to see hundreds upon hundreds of Snow-flakes feeding on the corn stacks placed far out on Lauder common. One or two of the birds were almost white. Where the hill sheep in that district are fed with hay, they resort in great flocks to feed on the seed. At Longcroft, when Mr Kelly

wrote, they were plentiful. A correspondent of the *Kelso Chronicle*, writing from Bowmont Water in the first week of February, 1881, says: "In the beginning of the snow, when on the top of Hownam Law, I met in with a large flock of Snow-flakes, or Snow-buntings, or, as they are often called by the boys, 'Cocks of the North.' They were feeding on the ground that was cleared of snow by the wind. I am quite sure there would be over two hundred of these hardy creatures. In this district as winter approaches, they are first seen on the highest lying stubble fields." At Primside they were frequenting the stackyards. In severe winters, particularly on drifty days, I have seen this happen at Penmanshiel; but in other circumstances they were too shy to approach within familiar distance. At Lamberton, Mr Mein states, they had all winter (1880-1) very large flocks of Snow-buntings. In 1879, Oct. 24th, Snow-flakes arrived at Oldcambus.

GREAT GREY SHRIKE OR BUTCHER BIRD (*Lanius Excubitor*).—Before Oct. 20th, a Great Shrike was shot at Whitley Sands by Mr W. P. Jardine, Whitley; and on the week previous to Nov. 12th, another fine specimen was shot by Mr William Burrell in the neighbourhood of Glenaln, in the vale of Aln (*Kelso Chron.* Oct. 20th and Nov. 12th, *Alnwick Mercury*, Nov. 13th) The *Scotsman*, Nov. 12th, records that a number of Butcher-birds (*Lanius Excubitor*) or Grey Shrikes, were seen on the lands of Shirva, near Kilsyth.—Mr Thomas Elliott wrote to me from Lilburn Tower that he had shot near his house, on the 8th Nov., a fine specimen of the Great Butcher Bird. Mr George Parkin, Bampton, also wrote, that he had got a fine specimen, a male, shot near that place, 18th Nov., 1880. Dr. Stuart, Chirnside, mentions that while his second son was driving to Greenburn, 13th Feb., 1881, "when near Auchencrow Mains, he observed a peculiar bird on one of the hedge-row trees, which sat till he satisfied himself that it was the Great Shrike, a native of Lapland. It took wing and flew towards Stoneshiel. On looking at the figure of the bird in Morris's British Birds, he at once made himself sure of its identity." It thus appears that a flight of these birds had arrived in the north of Britain during the autumn. It was recorded long ago by Mr Selby as an occasional winter visitant (*Club's Proc.*, vol. i., p. 257).

HAWFINCH (*Coccothraustes vulgaris*).—"Berwick, November 2nd. During the terrific storm on Thursday last, 28th Oct., I had occasion to walk on the sea-banks between Spittal and Sand Bank

Lime Works, and as I neared the Railway Cottages connected with Scremerston Station, my attention was attracted by a bird, which was to all appearance one of the Finches, but of unusual size. It seemed to be entirely out of its element, and at the mercy of the wind and spray. From researches I have since made, I believe it to have been a Hawfinch."—*Thomas Darling*.—There has been an unusual abundance of the Hawfinch or Grosbeak this winter, noticed all over England; frequenting orchards and gardens into which they had been driven in search of food.

SKUA GULLS (*Lestris sp.*)—Mr Darling continues his statement thus: "Before I had gone a mile further along the banks, two Skua Gulls sailed gracefully past me, the first I have seen this autumn. I saw several last." Were these Pomarine Skuas?

WOOD-PIGEON (*Columba Palumbus*).—Penmanshiel, Oct. 30th, a very large migratory band, flying at a great height, passed from the north to the south, during the day. Previously it had been stormy weather in the north, the Highland hills being white with snow. Oct. 8th, as an instance of late breeding, Mr Knight in Floors Castle gardens, found a young pigeon apparently of a week old, which had fallen from the nest to the ground. Wood-pigeons felt the winter of 1880-1 severely. I noticed three or four dead birds. They had nothing to depend on but the turnips, where not fully covered by the snow. At Chirnside, Dr Stuart writes, "Wood-pigeons were observed to fall off the branches at Stuartslaw, frozen or starved to death; and at Leetside the men caught them at the sheep boxes unable to fly away. They were feathers and bones, poor things. Many dead birds have been picked up." During the summer, a white Wood-pigeon was several times seen among other Cushats in the Pease dean. Mr Robert Waite, Blinkbonny, Dunse, got, in Jan., 1881, a white Wood-pigeon spotted with gray, which had been captured alive in a turnip shed.

GOLDEN PLOVER (*Charadrius pluvialis*).—Nov. 2nd. During a hard frost great numbers were associated with Lapwings on the turnip fields in East Lothian. Dec. 28th. Thirty Plovers on lea near Oldcambus, mixed with Lapwings. They were scarce in winter 1880-81.

SHORT-EARED OWL (*Otus brachyotus*).—Nov. 2nd, sprung a Short-eared Owl on the sea-rocks near Boulmer.—*T.H.G.*—In Nov., 1880, Mr Robert Waite had two "Marsh Owls" from Longformacus.

WHITE SPARROW (*Passer domesticus*).—"Nov. 4th, 1880, during stormy weather, I observed, while at breakfast, a perfectly snow-white Sparrow sitting on the hedge at the foot of my garden. On going out, I saw it feeding with a flock of other sparrows and greenfinches. It remained in the neighbourhood several days, but has, I am afraid, been shot. It was seen at East Blanerne and other places, but its companions did not seem to relish its company, as its colour attracted more attention than was desirable."—*Dr Charles Stuart*. About the date Dr Stuart assigns I was informed that a white Sparrow was shot within Berwick Bounds. During the winter, Mr Loney observed a white Sparrow in company with others of the usual hue at Marchmont. The boys had got their eyes on it, but it was still present on March 1st, 1881.

LITTLE GREBE (*Podiceps minor*).—Nov. 5th, several Little Grebes on the river Aln, and by the edge of the withered sedges, and near to them, a female GOLDEN EYE (*Fuligula clangula*) made its appearance.—*T. H. G.* In Dec., 1879, after the ice broke up, a Little Grebe, dead, was found at the edge of the Whitadder near the rifle range at Blanerne. In the same month, Mr Ross Hume, of Ninewells, shot two GOOSANDERS (*Mergus Merganser*) on the river there.—*Dr. Stuart*.

SISKIN (*Carduelis Spinus*).—Nov. 5th, numerous among trees in Gordon Moss.—*Rev. William Stobbs*. Nov. 10th, large flocks of Siskins were seen feeding on the alders on the banks of the Aln.—*T. H. G.*

GREAT NORTHERN DIVER (*Colymbus glacialis*).—In the afternoon of Nov. 7th, a Great Northern Diver was captured in Buccleuch Square, Newcastleton, by Michael Dagg, carter. The bird was apparently exhausted for want of food. It measured across the wings from tip to tip 6 feet 1 inch.—(*Kelso Chron.*, Nov. 12th).

GOLDEN CRESTED WREN (*Regulus cristatus* v. *aurocapillus*).—Alnwick, Nov. 12th. Every winter we are visited by several companies of this beautiful little warbler. At the above date, when it was very cold and snow lay on the ground, I observed three of these tiny birds threading their way through a hedge in the teeth of the storm, whilst the hardy animals of the field were huddled under the covert of the most sheltered places.—*T. H. Gibb*. Its absence has been noticed in the West of England during the winter. On March 27th, 1881, I noticed one in a hedge near Cockburnspath Tower, which probably had wintered in the adjacent dean.

ROUGH-LEGGED BUZZARD (*Buteo lagopus*).—A female in grand plumage was shot at Ladykirk lately.—(*Ber. News*, Dec. 7th, 1880). Of late, John Laidlaw, gamekeeper, Bengerburn, Yarrow, has trapped three BUZZARDS (*Buteo vulgaris*), one of which measured 48 inches between the tips of the wings.—(*Ib.*, Dec. 14th).

BOHEMIAN WAXWING (*Ampelis garrulus*).—9th Dec., a fine specimen of the Bohemian Waxwing was shot at Howton near Alloa (*Scotsman*, Dec. 11th). Another was shot about the middle of January, 1881, in the immediate vicinity of Kelso.—(*Kelso Chron.*, March 11th).

LARK (*Alda arvensis*).—Oldcambus, Dec. 16th, during a slight frost, with thin snow on the ground, a great flock of Larks, about 100, feeding on stubble fields, creeping close to the ground, through the stubble; on being disturbed, they broke up into small parties. There was much low inward warbling among them as they fed. Dec. 17th, about 40, mixed with "Snow-flecks," on the stubbles in another direction. In February, after the snow decreased, Larks were numerous on the borders of turnip fields, and continued till March, when they scattered in the neighbourhood. Larks are plentiful all over the east of Berwickshire, even in the most cultivated places; there has been no diminution of their numbers nor any marked increase.

GREY LINNET (*Linota cannabina*).—A few bred in the dean at Oldcambus this summer, but were thinned before I was aware by a Newcastle bird-catcher, who had also been poaching for them with bird-lime in East Lothian. Dec. 31st, a flock of thirty feeding on ploughed ground near the sea-banks, which is full of wild mustard seed. On Dec. 29th there were about seventy in one flock, and thirty in another, on similar ground. They pack very closely together when feeding. On Jan. 17th, etc., in the midst of the snowstorm, three or four came to the stackyard with other finches, or partook of the poultry's corn. They were bold in feeding, and a local bird-fancier again discovered their weakness and captured a few. In 1879, March 28th, one returned, and others on April 11th; 6th May, 50; on Oct. 13th, a flock of 30 counted.

WREN (*Troglodytes Europæus*).—Jan. 5th, 1881, the last Wren was seen examining the interstices of a stone wall. None have been visible since.

DATES UNKNOWN.

SHORE LARK (*Alda alpestris*).—A party of the Rotherham

Naturalists' Society, while on a collecting expedition on the Farne Islands, obtained a specimen of the *Alauda alpestris*, or Shore Lark.—(*Kelso Chron.*, Feb. 13th, 1881).

KING DUCK (*Somateria spectabilis*).—Mr J. Sutton, Durham, wrote to *The Field*: "I have been credibly informed that a King-Eider visited the Farne Islands during the breeding season."—(*Ber. Adv.*, Sept. 1880).

HONEY-BUZZARD (*Pernis apivorus*).—In the summer of 1879 a Honey-Buzzard frequented Penmanshiel wood, and was left unmolested.

Time of arrival of Migratory Birds at Belford, Bowmont-water. By J. ROBSON-SCOTT, M.D.

CUCKOO.

1858, May 10th.	1866, May 7th.	1874, April 29th.
1859, May 6th.	1867, May 7th.	1875, May 4th.
1860, May 12th.	1868, May 10th.	1876, May 6th.
1861, May 24th.	1869, June 3rd.	1877, May 8th.
1862, May 5th.	1870, May 7th.	1878, May 7th.
1863, May 7th.	1871, May 1st.	1879, May 8th.
1864, May 5th.	1872, April 24th.	1880, May 7th.
1865, May 7th.	1873, May 6th.	

SWALLOWS.

- 1858, May 4th.—H. urbica and riparia and rustica.
 1859, May 4th.—H. urbica ; 10th, H. rustica and riparia.
 1860, May 1st.—H. rustica ; 8th, H. urbica and riparia.
 1861, May 1st.—H. urbica ; 15th, H. rustica and riparia.
 1862, May 1st.—H. rustica and riparia, and H. rustica.
 1863, May 9th.—H. rustica and riparia ; 15th, rustica.
 1864, May 9th.—H. rustica ; 12th, H. urbica and riparia.
 1865, May 4th.—H. riparia ; 8th, rustica ; 16th, urbica.
 1866, May 5th.—H. riparia and rustica ; 10th, urbica.
 1867, April 18th.—H. rustica and riparia ; 18th May, H. urbica.
 1868, April 24th.—H. rustica and riparia ; May 16th, urbica.
 1869, April 24th.—H. riparia ; May 14th, H. urbica and rustica.
 1870, May 6th.—H. riparia and rustica ; 18th, H. urbica.
 1871, April 27th.—H. rustica and H. riparia and H. urbica.
 1872, April 28th.—H. rustica and H. urbica ; May 5th, H. riparia.

410 *Donations to the Berwickshire Naturalists' Club.*

1873, April 20th.—*H. urbica*; May 7th, *H. rustica* and *H. riparia*.

1874, April 22nd.—All three.

1875, April 28th.—*H. rustica*, *H. urbica*; May 4th, *riparia*.

1876, May 5th.—All three.

1877, April 28th.—*H. riparia*; May 14th, *H. rustica*.

1878, April 28th.—*H. riparia*; May 6th, *H. rustica* and *H. urbica*.

1879, May 15th.—*H. rustica*; 24th, *urbica* and *riparia*.

1880, May 7th.—*H. rustica*; 20th, *H. urbica* and *riparia*.

The arrival of Swallows does not seem to be much influenced by the weather; but when the cold is unusual, they sometimes disappear for a short time, and return in a few days.

WHITETHROAT, observed for 23 years. 1858, May 20th.—Date of arrival for 23 years, between 5th and 15th May; never as early as April. Of late years it has been growing scarce, from no evident reason.

WILLOW WREN (*Sylvia trochilus*)—Usual time of arrival from 20th till 28th April. Often seen several days before it begins to sing. Observed for 15 years.

Very few migratory birds occur in this district. No Thrushes have been seen since the spring of 1879, when they all died. Blackbirds survived, being less timid than Thrushes.

*Donations to the Berwickshire Naturalists' Club, from
Scientific Societies, &c., 1880-1.*

BATH. Proceedings of the Bath Natural History and Antiquarian Field Club, Vol. iv., No. 3. 1880, 8vo. *The Club.*

BREMEN. Abhandlungen herausgeben vom Naturwissenschaftlichen Vereine zu Bremen, vii. 1 and 2 Heft. 1880, 1881, 8vo. *The Society.*

——— Meteorological Tables, No. 8. *Ibid.*

BUCKHURST HILL, ESSEX. Transactions of the Epping Forest and County of Essex Naturalists' Field Club; 4 parts and 2 pamphlets. 1880-1, 8vo. *The Club.*

CARDIFF. Report and Transactions of the Cardiff Naturalists' Society, vol. xi., 1879, and vol. xii., 1880. London, 1880-1, 8vo. *The Society.*

DUBLIN. Scientific Proceedings of the Royal Dublin Society; Vol. i. 1877-8; Vol. ii. 6 parts. Oct., 1878 to July, 1880, 8vo. *The Society.*

- DUBLIN. Scientific Transactions of the Royal Dublin Society, Vol. i. New Series, Dublin, 1877-1880, 4to ; Vol. ii. Parts 1 and 2. *Ibid.*
- EDINBURGH. Transactions and Proceedings of the Botanical Society, Vol. xiv. Part i. 1881, 8vo. *The Society.*
- Transactions of the Edinburgh Geological Society, Vol. iii. Part iii. 1880, 8vo. *The Society.*
- Proceedings of the Royal Physical Society, Session 1879-80, Vol. v. Part ii. 1880, 8vo. *The Society.*
- ESSEX, SALEM, U.S.A. Bulletin of the Essex Institute, Vol. xi. 1879. 1880, 8vo. *The Institute.*
- GIESSEN. Neunzehnter Bericht der Oberhessischen Gessellschaft für Natur-und Heilkunde. 1880, 8vo. *The Society.*
- GLASGOW. Proceedings of the Philosophical Society of Glasgow, 1879-80, Vol. xii. No. 1. 1880, 8vo. *The Society.*
- Proceedings of the Natural History Society of Glasgow, Vol. iv. Parts 1 and 2 (1878-9). 1880-1, 8vo. *The Society.*
- HAWICK. Transactions of the Hawick Archæological Society for 1879 and 1880. 4to. *The Society.*
- LEEDS. Annual Report for 1878-80 of the Leeds Philosophical and Literary Society. 1880, 8vo. *The Society.*
- Transactions of the Yorkshire Naturalists' Union. Parts 1, 2, and 3. Leeds and London, 1878-9-80, 8vo. *The Society.*
- LIVERPOOL. Proceedings of the Literary and Philosophical Society of Liverpool, Vols. xxxiii and xxxiv. Liverpool, 1878, 1880, 8vo. *The Society.*
- LONDON. Proceedings of the Geologists' Association, Vol. vi., Nos. 8 and 9 ; Vol. vii. No. 1. 1880-1, 8vo.
- Journal of the Anthropological Institute of Great Britain and Ireland, August, 1880, Vol. x. No. 1, No. 2, 1880, and No. 3, 1881, 8vo. *The Institute.*
- MANCHESTER. Memoirs of the Literary and Philosophical Society of Manchester, Vol. vi. third series. London, 1879, 8vo. *The Society.*
- Proceedings of the Manchester Literary and Philosophical Society, Vols. xvi, xvii, xviii, and xix. Manchester, 1877-1880, 8vo. *Ibid.*
- NEWCASTLE. Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne, Vol. vii, Part ii. 1880. *From the Tyneside Naturalists' Field Club.*

WASHINGTON, U.S.A. Annual Report of the Board of Regents of the Smithsonian Institution, 1878, 1879, 8vo. *The Institution.*

———— Eleventh Annual Report of the United States Geological and Geographical Survey of the Territories embracing Idaho and Wyoming; being a report of the Progress of the Exploration for the year 1877, by F. V. Hayden, U.S., Geologist. 1879, 8vo. *From Dr. Von Hayden.*

———— Bulletin of the United States Geological and Geographical Survey of the Territories, Vol. v. No. 4. 1880, 8vo.

Ibid.

———— History of North American Pinnipeds, a Monograph of the Walruses, Sea-Lions, Sea-Bears, and Seals of North America, by Joel Asaph Allen. 1880, 8vo. *Ibid.*

———— Annual Report of the Board of Regents of the Smithsonian Institution, for the year 1879, 1880, 8vo. *The Institution.*

WELSHPOOL. Collections, Historical and Archæological, relating to Montgomeryshire and its Borders, Vol. xiii, Parts ii and iii; Vol. xiv, Part i. London 1880-81, 8vo.

From the Powysland Club.

General Statement.

THE INCOME AND EXPENDITURE have been :—

INCOME.			
		£	s. d.
Balance in hand from last year	..	12	8 8½
Arrears received	.. ..	13	10 0
Entrance Fees	.. ..	15	0 0
Subscriptions	.. ..	70	16 0
		<hr/>	
		111	14 8½
Balance due Treasurer	..	5	2 2
		<hr/>	
		£116 16 10½	
EXPENDITURE.			
Gibb and Hay for Lithographing	..	2	1 0
Printing	.. ..	75	4 4
Expenses at Meetings	.. ..	11	2 0½
Postages and Carriages	..	20	7 7
Berwick Salmon Company	..	8	1 11
		<hr/>	
		£116 16 10½	

Rain Fall at Glanton Pyke, Northumberland, in 1880, communicated by FREDK. J. W. COLLINGWOOD, Esq.; and at Lilburn Tower, Northumberland, communicated by Mr JOHN DEAS.

GLANTON PYKE.				LILBURN TOWER.			
			Inches.				Inches.
January	..	..	0.75'0	January	..	..	0.477
February	..	..	2.34'5	February	..	..	2.005
March	..	..	1.86'5	March	..	..	2.042
April	..	..	1.73'5	April	..	..	1.381
May	..	..	1.95'0	May	..	..	1.493
June	..	..	1.48'0	June	..	..	2.152
July	..	..	3.69'0	July	..	..	4.104
August	..	..	1.40'0	August	..	..	1.665
September	..	..	4.71'5	September	..	..	4.543
October	..	..	4.27'0	October	..	..	5.430
November	..	..	3.57'0	November	..	..	4.127
December	..	..	3.22'0	December	..	..	3.315
Total			30.99'0	Total			32.734

Rain Gauge—Diameter of Funnel, 8in. ; height of Top above ground, 4ft. 3½in. ; above sea level, 517ft.

Rain Gauge—Diameter of Funnel 10in. square ; height of Top above ground, 6ft. ; above sea level, 300ft.

Places of Meeting for the Year 1881.

Dunbar, for Biel, and Belton	..	Wednesday, May 25.
Grant's House (Jubilee Meeting)	..	„ June 29.
Elsdon, for Otterburn, &c. ..	..	„ July 27.
Kelso .. ..	..	„ Aug. 31.
Innerleithen, for Traquair and the Glen	..	„ Sept. 28.
Berwick .. ..	..	„ Oct. 12.

LIST OF NEW MEMBERS FOR 1880.

ADMITTED OCTOBER 13TH, 1880.

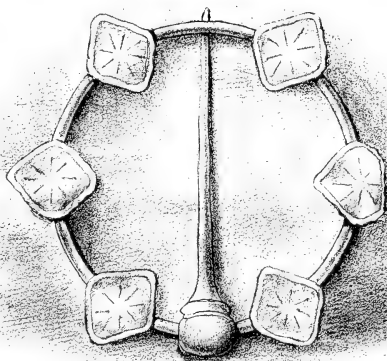
John Crawford Hodgson, Buston Vale, Lesbury.
 John Sadler, Curator, Royal Botanic Gardens, Edinburgh.
 Joseph Moore, Inveresk.
 Ralph Moore, Inveresk.
 Rev. James Millar, Eyemouth.
 Walter Grieve, Cattleshiels, Dunse.
 J. Erskine Stuart, M.D., Dunse.
 Rev. Alex. Phimister, Gordon.
 J. Gordon Maitland, Advocate, Procurator Fiscal, Dunse.
 Rev. Duncan Maclean, B.D., Allanton.
 James Fergusson, Morpeth.
 Rev. James Spence, Ladhope, Galashiels.
 John Broadway, Banker, Alnwick.
 Alexander Dickson of Hartree and Kilbucho, M.D., Professor of Botany
 in the University of Edinburgh.
 Shallcross Fitzherbert Widdrington of Newton Hall, Northumberland.
 Rev. Dr. Snodgrass, Canonbie, Dumfriesshire.
 Rev. Charles J. Cowan, Morebattle, Kelso.
 Rev. Thomas Ilderton of Ilderton, Northumberland.
 Edwin Thew, M.D., Alnwick.
 Thomas Walby, Alnwick.
 William Newton Morrison, Newcastle.
 Rev. Charles Baldwin, Vicarage, Berwick.
 William Alder, Berwick.
 Robert Weddell, Berwick.
 George Weatherhead, Berwick.

ERRATA.

- PAGE 229, line 23 from the top, *for* Hammerball, *read* Hammerhall.
 „ 242, „ 33 „ *for* these, *read* those.
 „ 250, „ 12 „ *for* site, *read* side.
 „ 377, last line, *for* unintelligible, *read* unintelligible.
 „ 299, line 13 from the top, *for* Mollinia, *read* Molinia.
 „ — „ 32 „ *for* officinale, *read* officinalis.
 „ 314, „ 9 „ and elsewhere, *for* Deodora, *read* Deodara.
 „ 330, lines 40 and 41 from the top, *for* poplars, *read* poplar.
 „ 338 line 41 from the top, *for* *Handsworthieasis*, *read* *Handsworthiensis*.
 „ — „ 42 „ *for* *Adpressa*, *read* *adpressa*, and *for* *cupressus*,
read *Cupressus*.
 „ 345, „ 23 „ *for* unusually, *read* usually.
 „ 351, „ 23 „ insert *not* after *do*.
 „ 363, „ 7 „ *for* pushed, *read* picked.
 „ 367, „ 5 „ *for* *Sola*, *read* *Sula*.
 „ 368, in last line, *read* INTERROGATIONIS.
 „ 382, line 3 from top, *for* Caldewhere, *read* Caldew here.

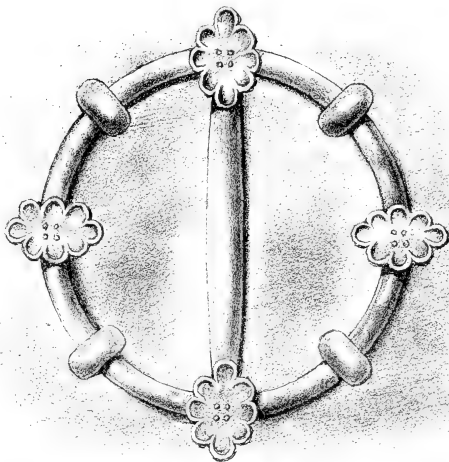
22 DEC 1887





♂

Full Size. Weight 245 grs.



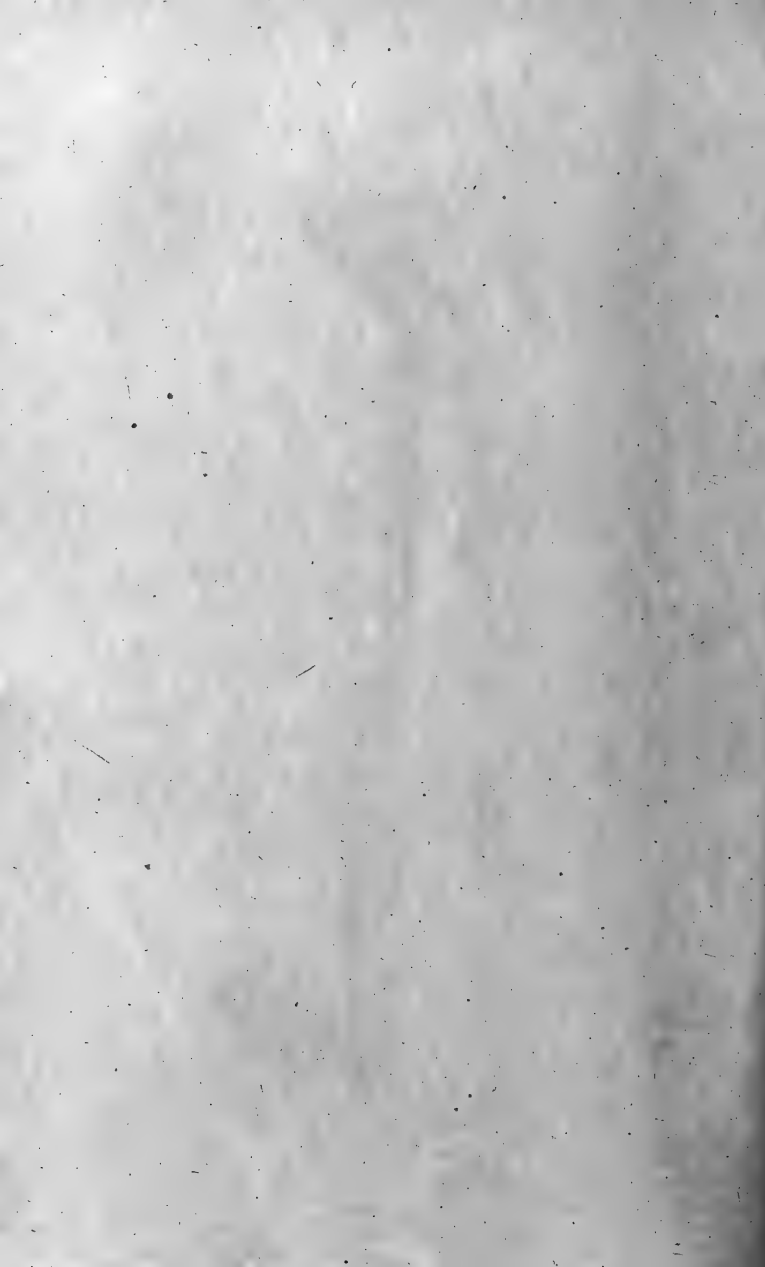
♂

Full Size. Weight, 615 grs.

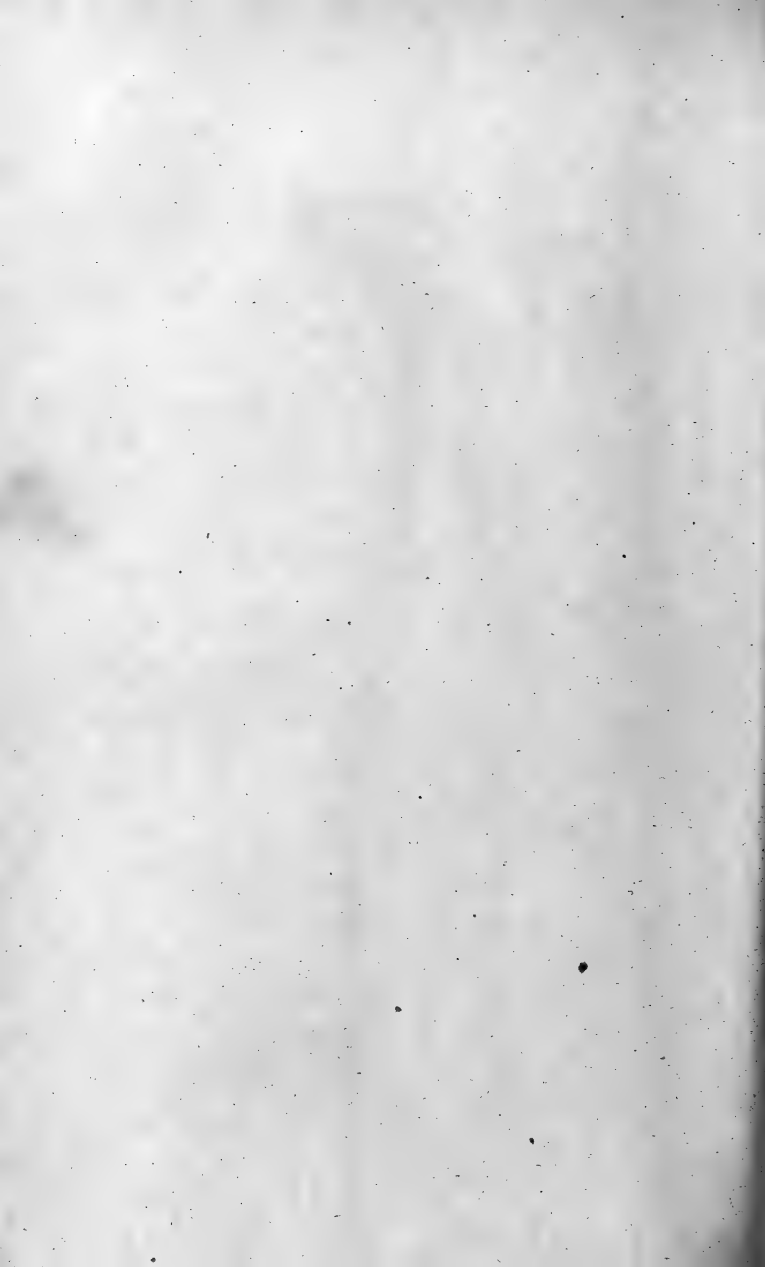
SILVER BROOCHES FOUND AT LANGHOPE, SELKIRKSHIRE,
FEBRUARY, 1880.











PROCEEDINGS
OF THE
BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Berwick, October 12th, 1881. By the Rev. THOMAS BROWN, F.R.S.E., Free Dean Church, Edinburgh.*

GENTLEMEN,

ALLOW me most sincerely to thank you for the distinguished honour you have done me in calling me to occupy the position of President during the Jubilee year. The circumstance that I belonged to the Club during the first year of its history may have influenced you in your choice, but I feel that it is only your kindness which could have induced you to place me in a position which so many of your number are much more entitled to occupy—all the more I beg to offer you my thanks.

It is with a strange feeling that one looks back over half a century, and finds how the years have been passing away. It would be a tempting theme to review the history of the Club, to recall the memory of friends who are gone, to describe their work, and express the feelings which such a retrospect calls up. This, however, if it were to be adequately done, would require one far more intimately conversant with your proceedings than I am. At an early period my connection with the Club was interrupted—my parish was on the sea coast north of Montrose—there were no railroads in those days, and attendance at your meetings was

* Delivered in part at Grant's House, 29th June 1881—the Jubilee Meeting.

impossible. Even since the time when by your favour I was readmitted a member (1871), my engagements in connection with an Edinburgh church have made me an absentee oftener than I could have wished. Without attempting, therefore, anything so ambitious as a regular sketch of your history, I may simply refer to the early years of the Club, and contribute some reminiscences which may not be altogether devoid of interest. I shall have to speak mainly of Dr. Johnston, for he was more than the founder of the Club—he was the life and soul of all that was done, and if at the same time in doing this I become somewhat egotistical, I shall trust to your indulgence.

While yet a student at the University of Edinburgh, I had done something to the study of Botany, and it was my good fortune to become acquainted with Dr. Johnston soon after the publication of his “*Flora of Berwick-on-Tweed*.” He was, I found, anxious to have the *Flora of Western Berwickshire* examined as he had done that on the East, and at his request I undertook to investigate the plants of my father’s parish of Langton and the surrounding district. In this way we were led into close correspondence, and from time to time I used to find my way to Berwick, assured always of a friendly welcome and a full consideration of any point I wished to submit to his notice. It was in this way I got to know something of the origin of the Club. The first time I heard the subject mentioned was during a visit to Berwick in the autumn of 1830, I think, or the spring of 1831. The Rev. Andrew Baird, of Cockburnspath, was staying with Dr. Johnston, and one evening as we were sitting together in the drawing room, the question was suggested, in the course of conversation, whether we might not, in conjunction with other friends, try to work out the *Natural History of the district*. It was in this connection that Dr. Johnston began to speak of the possibility of forming a club. Various suggestions were made, our different views were exchanged, but my impression is that the matter had already taken shape in Dr. Johnston’s mind. His great desire was that the whole should be done in the most unpretentious way, with as few

rules as possible, with no entry-money, no fixed annual subscription, and no museum. The members were simply to be those who had congenial tastes in Natural History and Archæology. The meetings were to be in the form of excursions to favourite localities, where amidst the green fields and valleys, or along the hillsides, the pursuit of science might be practically carried on, while without formality the members could in pleasant friendly intercourse communicate to each other what they were doing in their favourite branches, and might afterwards place on record in some simple way any discoveries which might be made.

In this modest unpretending form the movement commenced, but it was not long till the Club became what it has continued to be—the centre towards which all new scientific facts connected with the district found their way. From the first, the whole intercourse of the members with each other was on the most genial and friendly footing. We all looked up to Dr. Johnston, none questioning his pre-eminence, while on the other hand, none was so eager as he to welcome and give credit to others for what they had done. An enthusiastic botanist himself, every new plant added to the Flora of our district was a new source of pleasure. I remember well the enthusiasm with which he welcomed and submitted to the Club the little Saxifrage (*Saxifraga hirculus*) from Langton Lees, and the *Anthoceros punctatus* from the fields of Gavinton—both at that time new to the Flora of Scotland. And so it was in every department. I never saw the slightest trace of jealousy; the whole relations of the members to each other were on the most cordial and amicable footing; the genial spirit of the President making itself felt in all their intercourse.

The value which he attached to the Club, and his pleasure in attending its meetings, was great. A single circumstance may be mentioned to show how he felt even from the first. The British Association for the Advancement of Science was formed, and held its first meeting during the same month of September in which our Club was instituted. We were a week before them, however, so that we are about a week the

elder of the two. I remember Dr. Johnston went to York, and was present when the great Association was inaugurated with all due dignity, attended as it was by an array of well known scientific celebrities. In a letter which I received from him soon afterwards he described the proceedings, but added that, in his opinion, the meeting at York was not so good—not so much worth attending—as the meeting of the Berwickshire Naturalists' Club, held the previous week at Grant's House.

One of the many remarkable circumstances connected with this Club has been the power which it has showed to propagate itself by the formation of similar institutions elsewhere. This did not take place all at once. For fifteen years it stood alone ; but in 1846 two of your members were the means of forming similar clubs—Mr. Carr, of Hedgeley, (now Mr. Carr-Ellison of Dunstan Hill,) and Sir Thos. Tancred, who had gone to reside in Gloucestershire. The example spread—the Cotteswold, Woolhope, Malvern, and other celebrated Field-clubs were formed on the model of the Berwickshire. But, for an account of these and similar institutions, I must refer to a valuable paper by Sir Walter Elliot in the "Proceedings of the Edinburgh Botanical Society," in which full details are given. Looking to the number of such societies now spread over England, Scotland, and Ireland, and to the many valuable papers which they have published, the formation of this Berwickshire Club becomes an event of no small importance in the scientific history of our country. Little did the small band of enthusiastic naturalists who met for the first time at Grant's House know the significance of the step they were taking, when in September, 1831, they inaugurated a new movement destined so greatly to influence the future progress of scientific research in all parts of the kingdom.

That these Field-clubs met a felt want is obvious from the very fact of their success. The real secret of their attractiveness lay in the opportunity which they gave for the free intercourse of congenial minds engaged amidst rural scenes in the elevating pursuit of Natural History. It was not in

the least necessary to be always making great discoveries. It was enough to meet and hold pleasant intercourse for information and friendly discussion on subjects of common interest. Of such meetings Dr. Johnston was the life and soul, and when men had once come within the circle and felt the charm of such intercourse, it is no wonder if, on removing to other districts, they sought to set up similar institutions—the example was one which could not fail to spread.

Within the district itself the Club has done much to diffuse a knowledge of Natural History. In some quarters this was desirable. When the New Statistical Account of Scotland was first projected about 1830, a series of questions was addressed to all the Parish Ministers, and among other things they were asked whether there were any remarkable Boulders in the parish. Soon afterwards, it so happened that a number of these gentlemen were met within the bounds of this Club, and one of them drawing attention to this query, asked what it meant—what was a Boulder? The question went round, and it turned out that no one present was able to tell. That took place—not in Berwickshire—about the time when this Club was instituted, and I remember Dr. Johnston and Mr. Baird speaking of it. Thanks to what has since been done among us, the time has long gone by when such an incident could have occurred.

It is not for me in this Address to attempt to estimate the value of the many important contributions to Natural History and Archæology which have appeared in your Proceedings. In the conversations which took place when the Club was formed, there was a kind of ambitious desire expressed to make our native district notable in the view of the scientific world, securing for it a name and a place in the history of scientific research. It is little that some of us have been able to do in carrying out this design, but thanks to Dr. Johnston and not a few able coadjutors it has been to a large extent attained. Even among the outside public this is acknowledged. During the present year a copy of your Proceedings has been offered for sale in the Catalogue of a London Bookseller, at the price of £13 13s, and I believe

even higher sums have been paid for the series. We do not of course estimate the value of scientific work by the amount for which in such circumstances it will sell, but the price may be taken as some indication of the esteem in which your Proceedings are held by the public.

But there are other and surer grounds in which an opinion may be formed. No one who is competent to judge can turn to the volumes themselves which the Club has issued without at once seeing what thorough work has been done—there are papers by Mr Tate of Alnwick, Mr Selby of Twizell, Mr Embleton, Mr Greenwell, and various other members, which are of the highest interest and value, and among these a prominent place is due to the contributions of your able and zealous secretary, Mr Hardy.

One remarkable circumstance is that some of these papers have subsequently developed into books which in certain cases have taken a permanent place in scientific literature. The “History of the Battle of Flodden,” by the Rev Mr Jones, and the “History of Alnwick,” by Mr Tate, originated in communications first made to this Club.

So also it was with Dr. W. Baird’s work on the Entomostraca. His first paper appeared in your Proceedings in 1835 containing 23 Berwickshire species previously known to science, and 15 new species which he had discovered within our bounds. It was the commencement of those investigations which issued in the important “History of British Entomostraca” published by the Ray Society.

The works of Dr. Johnston were still more remarkable. He had, among his other researches examined the Zoophytes of our coast, and in your Proceedings for 1836 he gave a list of the Berwickshire species. Previously, in the “Transaction of the Natural History Society of Newcastle” (ii. p. 240,) he had drawn up “A Descriptive Catalogue of Zoophytes found on the coast of North Durham.” In 1838, these led to the publication of his well-known work on “British Zoophytes,” a second enlarged edition of which appeared in 1842,—a work of which it is not too much to say that its appearance formed an era in the department of

science to which it belongs, giving a new impulse and direction to all subsequent enquiries.

A still more attractive book is the "Flora of the Eastern Borders," familiar to us all, in which Dr Johnston's whole powers as a writer and a Naturalist appear to the best advantage. In addition to many of those scientific details in which the systematic Botanist delights, it sparkles all over with the attractions of his literary style. Every poet who has sung the beauties of our native plants is laid under contribution, but better than all are the descriptions which flowed from his own pen. To the reader who turns over the pages, it almost seems as if he felt the fresh breezes blowing over the scenery of this fair Border land amidst which our rarer native plants are found, and which Dr. Johnston loved so well to describe. It is a delight to read, what it evidently was for him a delight to write.

Of the other scientific work which he did for the Club, I must not speak. At the time when I knew him, it was a wonder to me that one who had so many demands on his time could do so much as he did in the pursuit of Natural Science. On one occasion when I sent him some plants from Langton, he mentioned in his reply that he was engaged in professional work, eleven to twelve hours daily, but that did not prevent him giving the information I asked. And medical practice to him was no mere routine. No one, as I had occasion to see, could be more tenderly alive to the responsibilities of an anxious profession, but my belief is that, like many hard-worked men, he found relief and refreshment in the pursuits of Natural Science. He could not be idle. Some new investigation was always on hand, or he was recording the results already obtained. On various occasions it happened to me to be sitting in the same room in which he was at work, and I have a vivid recollection of the enthusiasm with which he went on—ever and anon some exclamation of surprise bursting from him as he summoned you to his side, to admire along with him the new wonders which his microscope had brought into view. It was impossible to come thus in contact with him, without feeling the fascin-

ation of that enthusiasm with which he pursued his favourite studies. And no less remarkable were his powers of description, the ease with which in simple graceful language he could set forth the form and structure of natural objects, throwing a charm over every subject which he touched. In this way he gave an impulse to the mind of others and gathered round him a band of able coadjutors, whose united efforts have made the Proceedings of the Club the repository of much scientific information which will never lose its interest and importance.

In this imperfect sketch of your proceedings there is one thing that must not be forgotten—the desire which everywhere appears to see the hand of God in all the works of nature, and mark the traces of His wisdom and power and goodness. I do not know any learned or scientific society in which this feature is so prominent, and it is gratifying to find that on such themes the laymen are in many cases the most outspoken. As in other matters so here also, it was Dr. Johnston who led the way and gave the tone to your Proceedings. “I have taught myself”—he says—“to take note of and pleasure in those works with which the Creator has crowded and adorned the paths I daily walk,” and his delight was in language as natural and unaffected as it was beautiful to express the feelings which thus rose in his mind. In the first Presidential Address delivered from the chair of this Club, he reminded the members how the Scriptures “send us for instruction to the ant and the lilies of the field, and bid us seek out the wonderful works of God and learn their lessons,” praising “the Creator through His creatures for His most gracious benignity and most benevolent munificence.” Sometimes also when circumstances naturally called for it, the Providential care of God was distinctly recognised. During the year in which our Club was instituted the first great outbreak of Cholera took place in Britain. Dr. Johnston described it as marching through the land “with fear in its front, and mourning in its rear,” and after referring to its ravages in some parts of the Eastern Borders, he gave expression to a feeling of devout thankfulness that no member of the Club had fallen a victim.

In this spirit the Club was inaugurated, and all along through subsequent years the same feeling of devout earnestness may be traced—especially among the more able contributors to your Proceedings. And long may this spirit continue, the desire so to study the works of Creation as to “rise through nature up to nature’s God,” never forgetting in all our scientific researches that “the earth is the Lord’s, and the fulness thereof.”

Thus far we have sought to look back into the past. It is just 50 years within a few weeks, since I joined the Club. Two years afterwards I read a paper—that is 48 years ago—and here once more I have the honour to address one of your meetings. Of those who were present on the former occasion I am now the only survivor. Who knows whether, among our younger members, there may not be some one who may be spared to see another Jubilee, and who may look back on us as we are now looking back on those who have gone before us. But however that may be, and whoever may live to see that time—the centenary of the Club—one thing I will venture to predict—the Natural History of these Border counties will not even then have been exhausted.

It is a fair scene which lies spread out around us, with its hills and valleys and rivers, and that great sea with its sandy shores on the South, and its rock-bound coast on the North, and all over it is full of the wonders of Creation. From Bamburgh Castle to St. Abbs and Dunbar, away along the mountain range of the Cheviots, on to the Eildons, and round the wide sweep of the Lammermoors, out over the fertile plains of the Merse, down the classic banks of the Tweed, and up many a romantic valley north and south of the Border, we have a district full of interest, within which lie many spots yet waiting to be explored—many a secret recess destined amply to reward the researches of the student of Nature. When shall our Archæologists have told us all that is to be learned of Antiquarian lore in these Border Counties? When shall the Botanists have got the last plant—down to the minutest moss or Alga? When shall our Entomologists have catalogued the whole insect fauna, or the

Geologists have unlocked all the treasures which lie hid in our rocky strata? Does any one suppose that the next 50 years will see all this accomplished? I trow not.

But even if that were so—if your catalogues were all made up and the lists of species complete—every real Naturalist knows that even then you would not have got far beyond the beginning of your work. There is not a living organism, not a plant or animal that has not secrets which we have not yet fathomed—something in its structure or habits fitting it for the place it has to hold and the work it has to do in the great scheme of Nature. For the investigation of such relations and of the questions which they raise, you have in these Eastern Borders, with their varied scenery, a wide field—than which, I believe, no better is anywhere to be found. And, let me say, it is when the man of science comes to this part of his work that the true charm and value of his studies begin—all his intellectual powers are called into exercise. The great Book of Nature lies before us full of secrets which it is ready to unfold, and the more you ransack its pages and the more you push forward your discoveries, you find there is more and yet more to learn. So it goes on from generation to generation. Gentlemen, in such enquiries let us never forget that these are the works of the Infinite Creator with which we are dealing, and therefore they are exhaustless. The whole field is full of the wonders of His hand, and the further we go the more the horizon widens; the higher we rise the more we behold of the glory of the Great Maker of Heaven and earth, and the more we are compelled to sit down in adoring wonder at the feet of Him “of whom and to whom and through whom are all things.”

*Report of the Meetings of the Berwickshire Naturalists' Club
for the year 1881. By JAMES HARDY.*

THE first meeting for 1881 was held at Dunbar, on Wednesday, May 25th, with the view of visiting Belton, Biel, Stenton, and Presmennan. The following were present: Emeritus Professor Balfour, M.D., F.R.S., Edinburgh; J. W. Barnes, Durham; Rev. J. F. Bigge, Stamfordham; James Bogie, Edinburgh; W. B. Boyd of Faldonside; R. P. Brotherston, Tynningham Gardens; Capt. R. Carr-Ellison of Hedgeley; William Dickson, Edinburgh; Robert Gray, F.R.S.E., Edinburgh; Rev. Canon Greenwell, F.R.S., F.S.A., Durham; James Hardy, Oldcambus (Secretary); Rev. Joseph Hunter, Cockburnspath; W. H. Johnson, Edinburgh; Rev. Ambrose Jones, Stannington; Robert Darling Ker, Edinburgh; Peter Loney, Marchmont; Rev. G. Majoribanks, B.D., Stenton; Capt. F. M. Norman, R.N., Berwick; Rev. W. Stobbs, Gordon; Charles Stewart, M.D., Chirnside; John Thomson, Kelso; Ramsay H. Traquair, M.D., F.R.S.E., Museum of Science and Art, Edinburgh; and Charles Watson, F.S.A. Scot., Dunse.

The early part of the day was wet and threatening, but the rain cleared off about mid-day. The journey was performed in three conveyances. On reaching Belton the rain descended in torrents; but sheltered by umbrellas and waterproofs, and the friendly cover of the trees, glimpses were obtained of the mansion-house and the well-grown trees in the park, although under the circumstances this could only be accomplished under much discomfort, and hastily. The mansion which is situated on the banks of Biel Burn, is an adaptation, effected in 1865, of an old fortified peel to modern requirements. The original structure, however, has had so much additional building incorporated with it as to be almost undistinguishable. Remains of it are traceable on the eastern and northern ends, where the wall as gauged by the arrow-slits is six feet thick. The members entered a vaulted apartment on the east, to inspect an illuminated coat of arms of the Tweeddale family of which house the owner, Capt. James G. Baird Hay is a cadet. There is a lengthened inscription in capital letters on the west gable, which, so far as the Club is concerned, remains incomprehensible. The front of the house has trained over it a white flowered species of *Spiræa*. At the west end a notable walnut tree has succumbed to the severity of

the recent rigorous winters, aided by the disturbances to its ultimate rootlets occasioned by the renovation of the mansion, which had induced a decay of some years' duration. It was lying in a prostrate condition. The trunk at the ground measured 5 feet 9 inches in circumference, and Mr Loney by counting the rings of wood, found that it had been between 190 and 200 years old. There were two acacias; one of them that measured 6 feet 9 inches at one foot from the ground, had been blown down a few years ago, and was re-erected, and still appears to be growing. A dense crop of *Ranunculus auricomus* arises here in the open space. In the adjoining pleasure grounds are several fine trees, including two beautiful yews, and a magnificent avenue of silver firs with tall clean boles, which may be from 150 to 200 years old. *Tulipa sylvestris* planted out on the bank above the walk showed numerous blossoms; and the *Scilla Italica* had flowers of more than the wonted size. *Tulipa sylvestris* at Tynningham and Ormiston this season has been very profuse in its blooms. Primroses both red and white have been planted here; purple comfrey, and Herb Gerard prevailed. Although Hart's-tongue (*Scolopendrium vulgare*) is cultivated on the rockery, it does not occur wild in the vicinity.

The trees in the park were far advanced in the expansion of their foliage, and many of them were splendid trees. The dimensions of the best of the trees here have been recorded by Mr Hutchison of Carlowrie, in his valuable communications to the "Transactions of the Highland and Agricultural Society of Scotland," and I extract them here from copies, which he has kindly furnished. Of the sycamores, at 100 feet above the sea-level, and quite within reach of the sea breeze and winds of the North Sea, three measure respectively—90, 82, and 85 feet in height; 12, 18, and 15 feet, length of bole; 12ft. 11in., 12ft. 6in., and 12 feet in circumference of trunk at one foot from the ground; and 9ft. 10in., all three, at 5 feet from the ground. One of these is a noble tree. Of the beeches three stand at 75 feet above sea-level, and their dimensions coincide; the height of the trees is 63 feet, the length of the bole is 31 feet, the circumference at one foot from the ground is 32ft. 3in.; and at 5 feet is 20ft. 4in. One is "a very magnificent specimen. A large hollow on the west side of its trunk is rapidly closing by the growth of healthy bark; and a stone trough, which had in its earlier years stood at its side, is now quite embedded in the tree, by its root columns

and buttresses growing quite over it only a very small portion is visible." The pigeons resorted to this trough for water, and hence it is called the "Doo-well." There are two very fine ashes in a row of trees on the south side of the policy park and road, at 60 feet above the sea-level. The one is 83 feet high; 12 feet length of the bole; 11 feet in circumference at 1 foot; and 9ft. 2in. at 5 feet from the ground; the other is 100 feet high; 18 feet length of the bole; 16ft. 2in. circumference at 1 foot, and 11ft. 10in. at 5 feet from the ground. This girths 11ft. 6in. at 12 feet high, and is a splendid tree. The "Birlie Tree" stands in a space outside the lodge, where formerly two roads met. The "Birlie Court" of the land-owner is said to have convened under its shadow. It is even alleged that those culprits who received a capital doom here, were taken to the "Gallow-law" at Presmennan, and there suspended; but this is to misunderstand the design of such conventions; and the Gallow-law was under the jurisdiction of another superior. The Birlie Tree is an ash, a very ill-thriven zig-zag example. Although sickly looking it produces a heavy crop of ashen-keys.

In the east gable of the stables, a stone bearing a shield with the arms of the Hay family is inserted, which had been brought from old stables, that had been formed out of a kind of barn for the reception of rents and dues in kind. A very rudely cut human head has also been transferred from the one structure to the other. This last may have belonged to a chapel of a bypast age.

The state of the weather having prohibited explorations by following the course of the burn, I will here state the results of of a passing survey, which I made in that direction two days previous to the meeting; my inquiries being chiefly devoted to the zoology of the neighbourhood. I entered the grounds of Belton in company with the gamekeeper, from the public road at Beltonford. There is an old waulk-mill near the entrance of the haugh that the burn intersects. On the north side a hole once frequented by badgers was pointed out. A race of badgers I am told is still preserved in Presmennan woods, where the marks of their scratching are occasionally discernible, and they still retain a privileged home at Newbyth. There are no polecats at Belton, but stoat-weasels, in diminishing numbers, still hold their ground. The haugh is of considerable breadth but is liable to be furrowed by inundations, and marred with gravel.

I noticed a very tall alder by the stream, with a short stout bole. The breadth of plantation on either bank is very limited. The north side carries some very good ashes, tough and serviceable for joinery purposes; the English elm grown here is said to be worthless. On the south side there are some handsome sycamores, two stately white poplars, and several wych-elms. The most conspicuous tree is an old Scotch pine, which overhangs a sloe-thicket. The branches have obtained their greatest development on the northerly aspect, like some others of the *Coniferæ* here. A large number of blackcap warblers, (*Sylvia atricapilla*) had taken possession of both strips, and were engaged in a friendly rivalry of song. A similar contest I found proceeding above Biel. Mr Grey informs me that more than the usual number of blackcaps have been remarked in Scotland this season. Professor Duns has observed that they have this year reached the wilds of Lochaber; but on the east-coast line, it is known that they are distributed as far as Caithness. Protected from intrusion, the burn between Belton and Biel is at all seasons a great resort for the wild-duck, which intermingles promiscuously with the domestic and white call-ducks. Kingfishers ascend the burn, but do not breed. The dipper is not numerous; however I saw two. The water-hen is almost domesticated at the keeper's place, and feeds with the poultry, which is kept there, not far from the burn side. A very interesting circumstance was witnessed by his wife, of the young water-hens of the first brood assisting the mother to feed the babies of a subsequent hatching. First the mother fed the older ones, and then they joined and aided her in satisfying the wants of their lesser brothers and sisters, like grown up children helping a mother in the up-bringing of their juniors. The burn is at all seasons visited by herons. In the winter of 1879-80, a heron resorted to a place in the fields north from the burn, when the pheasants were supplied with food, and employed itself in catching the rats, attracted thither to steal the grain. Having effected a clearance it next removed to a feeding shed for sheep, and kept its watch there, killing all the rats it could obtain. There is a rookery at Belton; the rooks attempted to colonise Biel, but were not permitted. The horned, white, and brown owls have here an undisturbed refuge. The white owl nests in an ivied tree, and like all the owls is an early breeder. A few pairs of the grey wagtail (*Motacilla sulphurea* vel *boarula*), very gay and lively, had just arrived, being late in

coming this season. This is one of their nesting places. The pied wagtail exhibited a more sober gait, having been domiciled for some time. The willow-warbler, (*Sylvia trochilus*) was prevalent; but I listened in vain for the note of the *sibilatrix*. I observed a wood-pigeon cropping the newly expanded leaves of the beech, of which it is accustomed to make a hearty meal, as I have remarked once before. Grey linnets I was told are rather scarce in this quarter. A few breed in an old quarry, where some furze bushes grow. Blackbirds are still plentiful; but the winters have not spared the thrushes here more than elsewhere. Sand-martins were skimming the waters of the rivulet above Biel, and two pairs of chimney swallows frequented a detached dove-cot. The grass was so backward this spring that landrails, a circumstance never witnessed before, were seen running exposed in the open fields at Biel, and also in the ditches by road sides. Woodcocks were late in departing. A case had been heard of woodcocks remaining to breed at Presmennan, and another instance at Thurston High Wood. The Biel gamekeeper reported that ring-ouzels pass the summer on Deuchrie Dod above Presmennan. He had frequently on the moor edges watched young cuckoos while being fed by titlings (*Anthus pratensis*). He was positive that when a boy he had seen a cuckoo's egg in a wren's nest, which was placed against a bank; one large egg among ever so many small ones. Twenty years ago, he said, great spotted woodpeckers (*Picus major*) might now and then be visible at Newbyth. At first they were mistaken for jays. The jay is still to be met with at Salton Hall. One would scarcely expect vipers in woods so environed with cultivation, but one about a foot long had been killed on the foot-bridge above Biel. They are rather frequent on the moors above Presmennan.

There are some fine well-stocked trout pools in the burn. The trout are of fair size and good quality. A sea-trout, 4lbs. weight, had been taken recently, and as many as 15 dozen trout had been caught on one occasion.

There is lying at the keeper's cottage at Belton an old sundial, brought from Old Belton farm-place, with the date 1719 and the initial letters W.L. and G.W. There appears to have been an old garden near the side of the wood here: (*Doronicum pardalianches*, purple comfrey, and Herb Gerard occupying large spaces. *Barbarea vulgaris* which also grows as far up as Biel Grange (accompanied there with *Reseda lutea*), was also noticed;

and there are beds of butter-bur. The giant bell-flower (*Campanula latifolia*) grows near the footpath, in the wooded part of the dean above the house. There are here exposed small sections of the sandstone rock, which rises obliquely at a considerable angle in white and red seams. A band of "keel" or ruddle occurs in a quarry on the south side. On the north, where we emerge on Biel property, the rock appears to be a compact red marl. It is occupied by a fragment of aboriginal wood. The rest of this northern bank is in grass. Round its lower margin the rivulet made a fine semicircular sweep below a rocky bank clothed with tall beeches and elms, of a pale green hue at this season, especially the clusters of elm seeds; whence the wind, keeping up a continuous sighing, wafted the withered envelopes of the bursting foliage, that dropping in successive streams to the sheltered side, wove a sort of gauzy mist in the sunshine. The seclusion here is perfect.

The Biel policies were entered at the eastern lodge by the drive that crosses the deer-park. There is a considerable stock of fallow-deer, but none of them were visible. The park has scattered clumps, and broader masses of beech and other trees crowning the elevated positions, and there are trees in rows as if the remnants of old hedges. The wooded screen between the park and the burn is not broad. It is composed mostly of large beeches, oaks, and elms; the beeches predominate both in numbers and magnitude. There is a fine cluster of rough-barked Spanish chestnuts among the oaks. The oaks are stiff, short stemmed examples, remarkably umbrageous. There is an imposing line of beeches on the side of the park on the bank opposite the mansion house, and viewed from the front of it, they have a fine effect. One of the finest trees on the place grows here, at the height of 120 feet above sea-level. By Mr Hutchison's measurement it is 105 feet high; its bole is 38 feet long; its circumference at one foot from the ground is 11 feet 10 inches; and at 5 feet, 11 feet 8 inches.

The house is not visible till a descent is made to the burn, and then it appears on the edge of the northern raised bank when looked up to, as a vast combination of handsome buildings, of a variety of ages, and of no particular style, almost street-like in its proportions,—surmounting a series of stone terraces, tier above tier, overhung or decorated with the foliage of shrubs and creepers cultivated in the intervening spaces. Between the base of the

terraces and the rivulet stretches a level haugh, where the grass being kept cut retains a perpetual verdure. This is ornamented with Coniferæ of various sizes, tall and upright, or in dense rounded or jagged masses, according as individual examples have thriven, or have obtained the full development of their natural shape. Verdant or flowering shrubs combined with tall trees flanking either end complete the environment of this charming piece of scenery, which pleases the more by the pervading tranquillity. The rivulet here is nearly straight, shallow, gravelly and clear, constantly flowing, but not roughly. The bridge that we cross is over-run with ivy. *Linaria cymbalaria* occupies many of the seams, and, as was observable afterwards, has established itself on the walls of the mansion house.

On the occasion of the Club's visit, Lady Mary Nisbet Hamilton had kindly intimated her intention to throw the principal rooms of her residence, with the family relics and treasures of art, open for the inspection of members. Besides the paintings and beautiful sculptures in the entrance hall, in the dining room is a gallery of the pictorial art of rare excellence and value. After viewing these, the members were received in the drawing room by Miss Nisbet Hamilton. Among the curiosities exhibited, which members were privileged to inspect here, were a pearl necklace, presented by Queen Elizabeth to one of the Manners family (an ancestress of the present family at Biel), when Her Majesty visited Burleigh; William Pitt's gold-chain, with a locket containing a portion of his hair, which had been bequeathed by that statesman to one of the Dundas family; a Bible of date 1649 containing family registers; a copy of Cranmer's Bible, published by Richard Harrison, London, in 1562; and a prayer book of 18th century date, in red velvet, which it is accounted lucky to have at marriages, as they all turn out fortunate when the service is read from it. It has been used at many Royal marriages, and contains the record of each signed by the archbishops of Canterbury. Several members having felt an interest in this, Miss Nisbet Hamilton has most kindly supplied me with the memoranda of the occasions on which her mother's historical prayer book was used.

"The Prayer Book belonged to Lady Robert Manners (whose daughter married my great grandfather William Hamilton Nisbet of Belhaven and Dirleton), and was borrowed by the then Archbishop of Canterbury (Secker) whose sight was defective, simply on account of the distinctness

of the type, when it devolved upon him to officiate at the marriage of George 3rd. He likewise used it on subsequent occasions. In course of time, I know not how, a superstition arose that the marriages at which this book was used, turned out happily, and therefore the Royal Family continued to borrow the same until the marriage of the Duke of Kent, after which time it was lost sight of, until my mother brought it again to light, and offered it to the Queen for the marriage of the Prince of Wales.

According to the inscriptions in the book, the following are the occasions on which it was used.

1. The marriage of George 3rd, with Princess Charlotte of Mecklenburg Strelitz, Sept. 8, 1761.
2. The baptism of the Prince of Wales (George 4th), Sept. 18, 1762.
3. The marriage of Princess Augusta, to the Prince of Brunswick, Jan. 16, 1764.
4. The marriage of Princess Charlotte of Wales, to Prince Leopold, May 2, 1816.
5. The marriage of Princess Mary to the Duke of Gloucester, July 22, 1816.
6. The marriage of Princess Elizabeth to the Landgrave of Hesse, April 7, 1818.
7. The marriage of the Duke of Cambridge to Princess Augusta of Hesse, June 1, 1818.
8. The marriage of the Duke of Clarence (William 4th) to Princess Adelaide of Saxony; and
The marriage of the Duke of Kent to Princess Victoria of Coburg, widow of the Prince of Leiningen, July 11, 1818.
9. The marriage of the Prince of Wales to Princess Alexandra of Denmark, March 10, 1863.
10. The marriage of the Duke of Edinburgh to the Grand Duchess Maria of Russia, Jan. 23, 1874.
11. The marriage of the Duke of Connaught to Princess Louise Margaret of Prussia, March 13, 1879."

For a similar reason, I also introduce a list of the best of the pictures, etc., at Biel house, authenticated by Miss Nisbet Hamilton, who spared no pains in shewing the visitors everything of interest.

"The following are amongst the best of the pictures:—

*1st Duke of Hamilton.....	}	<i>Vandyke.</i>
*1st Duchess of Hamilton.....		
*2nd Duke of Hamilton.....		
1st Lord and Lady Belhaven.....		
Charles 1st.....		
Prince Rupert and Prince Maurice.....	}	<i>Rubens.</i>
1st Earl of Denbigh.....		
*Mrs Hamilton Nisbet.....	}	<i>Gainsborough.</i>
Landscape		
*Lady Robert Manners, æta. 90.....		<i>Sir T. Lawrence.</i>

Lord President Dundas of Arniston.....	<i>Raeburn.</i>
Sarah Duchess of Marlborough.....	<i>Sir G. Kneller.</i>
2nd Duke of Rutland.....	} ... <i>Sir Peter Lely,</i>
*Lucy 2nd wife of do.	
Portrait of a Lady.....	
James 2nd, Earl of Arran.....	<i>Zuccherò.</i>
Christ in the Temple.....	} <i>Caravaggio.</i>
The Gamesters	
*Flight into Egypt.....	<i>Murillo.</i>
*Christ at the Well.....	<i>School of Caracci.</i>
Betrayal of Christ.....	<i>Gherardo della Notte.</i>
*The Tribute Money.....	<i>Supposed to be Ribera.</i>
3 Landscapes.....	<i>Gaspar Poussin.</i>
*Island of Fida.....	<i>Thomson of Duddingston.</i>

There are likewise specimens, some very choice, of the following masters:—

Guercino (Italian Head); **Canalieto* (View of Venice); **Guardi* (2 Do.); *Sasso Terrato* (Copy of Madonna della Seggiola of Raphael); **Giorgione* (Venitian Lady); *Bellini* (Holy Family); *Bassano* (Adoration of the Shepherds, and Dives and Lazarus): **Nicolas Maas* (Dutch Family); **Metzu* (Dutch Group); *Hobbema* (Landscape); **Adrian Van Ostade* (Dutch Boors); **Cuyp* (Men and Horses); **Lingelbach* (Christ preaching from the Boat); *Allan Ramsay* (Lord Sherard Manners), (Lady Robert Manners), (Lucy, Duchess of Montrose); *Crome of Norwich* (English Landscape); *Wissing* (Duchess of Portsmouth).

It is difficult to pronounce a decided opinion as to the respective merits of good pictures, which so greatly depends upon taste, but those which I have marked are generally considered striking specimens of the masters who painted them.

I may add that one of the works of art which we most highly prize is a colossal Bust of *Napoleon* by Thorwaldsen. There is also a good specimen by Campbell, viz. a statue of *Psyche*, and one by Westmacott, viz. 'The Homeless Wanderer.'

The charter chest at Biel is not arranged, but contains it is believed, some valuable historical papers. Some letters on affairs of State both from and to the Lords Belhaven, once the owners of the estate, were produced; several of these were in Charles II's hand.

Leaving the house the members proceeded to see the terraces, and the trees on the lawn. These decorated terraces of dressed stone give the place an unique character. They afford support to many fine trees and creeping shrubs. At the period of visit there was a splendid *Wistaria Sinensis* in full bloom. I shall not specify everything grown, but only individual instances that took the attention. The two first rigorous winters that we have experienced dealt gently with shrubs on the well-screened platforms,

but the frost of 1880-81 was of unexampled severity. *Fuchsia Riccartoni* was entirely cut down, for the second time within fifteen years. *Aloysia citriodora* which has been accustomed to grow on the open wall, had its upper wood killed, but shewed fresh sprouts from the under portions. *Escallonia Montividiensis* was greatly cut up; and *Edwardsia microphylla* (two bushes) was almost killed. *Leycesteria formosa*, as well as *Ampelopsis Veitchii* endured the winter untarnished. Both are much employed here, as well as *Periploca Græca*, and several of the Clematisses. *Magnolia grandiflora* and *Ligustrum Japonicum* yield a most refreshing look from their laurel-like foliage. An old myrtle which is exposed to the open air during the summer, is preserved in a sheltered corner under a glass case in winter. The spacious conservatory is parallel with the billiard room. In it were three well-grown Camellias, one being "Lady Hume's Blush." In the centre is a very tall specimen of the rough-looking Swamp Oak or Tinian Pine (*Casuarina equisetifolia*), which was first introduced to Britain from the South Sea islands by Admiral Byron in 1766. The Elk's-horn fern (*Platyserum alcicorne*) in an excellent condition composed a fantastic arch over a door-shaped opening, joined with two or three variegated aloes (*Agave variegata*); the sides of the frame work were made up of a tender green wall of *Selaginella denticulata*. A wide spreading *Lonicera* helped to cover the walls. *Cobæa scandens*, which has a large blue flower, was one of the greenhouse creepers. Other things noticed were a shewy purple *Dracæna*, and a large *Rhododendron arboreum*.

One of the Elgin marbles, which carries the name of St. Paul's Chair, brought from Athens, and bearing the symbol of Minerva stands here under cover. There is here also a memorial of the second Lord Belhaven's dislike of the Union. This is a stone, which at one time had been placed above the doorway in front of the house, but has been judiciously removed. It bears the following inscription:—

TRADITIONIS SCO.

ANNO PRIMO. 1707.

1707.

(i.e., In the first year of the betrayal of Scotland).

A rude old bowl-shaped Norman font, which had been derived from Stenton, and was to be seen here, has since the Club's meeting been restored to the parish church. The stone of which

it has been fabricated is similar to that used in the construction of the Norman doorway of the old church there.

A survey was next made of the trees and shrubs growing from the bridge upwards, and along the base of the bank on which the house is situated. It may be first premised that the winter of 1880-81 has not departed without distributing some of its significant marks. The Laurestinuses have been sore damaged; *Arbutus Unedo* was not only defoliated, but the stems and even the branches have been split. Many sweet bays and laurels would have to be cut down. A *Garrya elliptica* was killed, and an old *Quercus Ilex* (which has a bulbous base) above the house was stripped of its old leaves.

Entering the haugh at the lower end, a few notices may be taken of the condition of the Coniferæ, in this collection. The Deodars are growing well. *Picea nobilis* is very fine, but the top is gone; the squirrels are blamed for this and corresponding depredations on other specimens. There are several Wellingtonias, mostly young. Here they have a tendency to grow off the perpendicular by swaying to the north side whence the most vigorous shoots proceed. *Sequoia (Taxodium) sempervirens* has lost its main shoot several times, but always renovates it. *Cupressus macrocarpa* occurs next; and *C. Lawsoniana* is also represented; and we have the first of two fair grown Atlas cedars, *Cedrus Atlantica*. *Picea Nordmanniana* is very bushy, being hurt at the top. *Cupressus Nutkaensis (borealis)* is well thriven; *Abies Douglassi* is hurt at the top and forms a great bush; *Taxus fastigiata*, of which there are several distributed throughout, is fine; *Pinus Cembra*, a compact grower, is also worthy of remark. The largest *Cedrus Atlantica* is of great beauty. It measures 14 feet in girth at the ground, and has many large limbs, at least fourteen in number. Then we reach the great Cedar of Lebanon, the patriarch of all the others. It has a short stock which separates into a multitude of individual trees, some of which again coalesce, and it forms a grand object when it spreads at the summit. It was probably injured by over great attention in its youth. From its bulk the amount of timber in it must be very large. According to Mr Loney's estimate and measurement of this venerable tree, it is at present 82 feet high; its girth at one foot from the ground is 17 feet 4 inches; it then increases to 17 feet 9 inches; and at the height of five feet its circumference is 19 feet. "It was brought in a flower-pot from London, by the

anti-unionist Lord Belhaven, and planted about the beginning of the last century.”* A very curious shaped tall Cypress is its mate, being said to be coeval with it, but it is much less robust. Its stems are bared half-way up, and all dead wood has been carefully removed at the top, whose greenness is somewhat faded. It was carrying cones. Both trees at one time were in a back-going state, but fresh soil was supplied about the tips of the roots, which was effectual in producing a renewed vigour, especially in the cedar. A fine *P. Cembra* next attracts notice, and a young well-thriven *Araucaria*; more *Wellingtonias*, and then a young *Quercus Ilex*. Then we meet a double white hawthorn draped with ivy; and a good *Cryptomeria Japonica*, there being two here, but one has lost its top. At the upper end stands a beautiful *Magnolia*, a purple beech, and a weeping elm, there being weeping ashes elsewhere. At the northern angle is a Weymouth Pine (*P. Strobus*) pleasing in its emerald hue, although poor as a tree. Besides these the maples and sycamores, the old walnuts and ilxes in various positions near the house, are not to be overlooked, and there may be others of a miscellaneous character. There are some stately oaks near the north-west approach, although they might not furnish substantial results to the application of the tape line. The plants picked up in making this circuit, or elsewhere, were *Rumex viridis*, *Hypericum hirsutum*, *Lysimachia nummularia*, *Anchusa sempervirens*, and *Campanula Trachelium*. Ground-ivy was frequent.

On returning to the carriages it was found that the kindness of Lady Mary Nisbet Hamilton had not terminated yet. The company was invited to luncheon in the dining-room, where, after a sumptuous repast, Canon Greenwell, in a speech of some length, proposed the healths of “Lady Mary and Miss Nisbet Hamilton.” In doing so he said the Club had had an opportunity of viewing several State papers of rare interest and value. Miss Nisbet Hamilton had casually remarked that what the Club had seen were only a few which at random she had taken from the family charter-room. This being the case, the Canon thought it was a great pity that such historical documents should not be searched into, and the valuable parts brought into public notice. The Royal Commission for the preservation and publication of family documents had examined into the charter-rooms and charters of many of the ancient houses in England and Scotland,

* New Statistical Account of Haddingtonshire, p. 56.

and the result had been that much valuable knowledge, which might have remained unknown save to a few but for those researches, was now being brought before the public. He thought the Berwickshire Naturalists' Club, although it was not strictly in their field of work, should take the matter up, and if successful, the fact that such researches had been made by the Club would add to its popularity. The Club had been highly honoured by the kindness of the two ladies, and had felt great delight in visiting the place. He would ask Mr Marjoribanks to convey to them the best thanks of the Club. The sentiment was cordially responded to, and the Rev. George Marjoribanks, Stenton, who had acted as guide to the Club when the pictures were examined, stated that from what he knew of Miss Nisbet Hamilton, he was sure she would be most willing to allow the Club to make the researches to which Canon Greenwell had referred. He was sure, further, that the visit of the Club that day had given Lady Mary, even though on a sick bed, and Miss Nisbet Hamilton as much pleasure as the members had felt in visiting their beautiful home and its many treasures. He formally thanked the Club for the sentiment which had been so touchingly proposed and so cordially responded to.

Leaving the hospitable mansion, the members walked by the side of the wood to the ford, where the carriages were joined. The sweet and picturesque view of the narrow green haughs was much enjoyed. The stream, which the rain had caused to rise a little, flowed down the middle, and over its waters the swallows skimmed lightly. The banks on either side were finely wooded, and in the distance, where the trees closed up the view, were two rustic bridges, while in the immediate foreground a herd of Channel Islands and Ayrshire cattle were leisurely browsing. The lower branches of the thorn and some other shrubs in the woods showed, from their being denuded of their bark, that the rabbits had been in sore straits during the late storm. In the cottage garden at the bridge was a great show of apple blossom, and this appeared to be quite the rule this year.

Before leaving, it may be mentioned that *Sphinx Convolvuli* had been captured at Biel Lint-Mill. Pheasants of a white colour are occasionally hatched; bullfinches appear in all the woods. *Weissia verticillata*, in cushions and large masses, covers a dripping rock of petrified moss and calcareous tufa, on the way to Biel Grange. *Saponaria officinalis*, Mr Hepburn informs me, used to grow a little above the Lint-mill.

In proceeding to Stenton, after the junction of the Biel with the Dunbar road, the field on the right belonging to Meiklerig farm, was that in which the Urn, Flint-knife, and Whetstone were taken out of two cists disclosed in demolishing a cairn on the 20th January, 1878, of which there is an account in the present volume of Proceedings, pp. 101-104. A further notice of this discovery, illustrated with beautiful wood-cuts, is contained in the "Proceedings of the Scottish Society of Antiquaries," 1879-80, pp. 220, 221. From this it is evident that the urn was the occupant of one cist, and the flint-knife and whet-stone accompanied the cranium, &c., in the other. The shattered urn has been re-constructed, and is now with the other relics preserved in the Society's Museum. A hollow, visible from the road, represents the site of this ancient cemetery. The field is termed the Rood-well-field, and the structure that covered what was probably once a sacred fount, still called the "Rood-Well," was examined by the Club previous to entering Stenton village. On its summit were two detached stones; one might have been the basis of a pillar (possibly a portion of the shaft of the village cross), the other was conjectured to be the finial of a gable of the old church at Stenton, and since the meeting, it has, I am informed, been remanded to its legitimate position. Nothing is recorded about this well, but Mr Marjoribanks stated that the diminutive space of ground overgrown with nettles around it belongs to the Duke of Roxburghe, in whose family at one time lay the right of presentation to the living of Stenton. Stenton church like every other of early date, would be placed under a saintly guardian, to whom it was dedicated. Had this well merely indicated a cross that once stood here, the word *cross* would have survived, and it would have been named the Cross or Cors-well. Being however, designated a "rood" and not a "cross" well, although the words are equivalent, it possibly refers to the "Holy Rood"; and being inalienably annexed to the advowson, it is not unreasonable that it points to the church here, being under the protection of that symbol—the "Sanctæ Crucis." In 1669, when warrant was granted to John, Lord Belhaven, to hold two annual fairs, and a weekly market at Stenton, so utterly had the remembrance of any sanctity about the place been effaced, that in the Act of Parliament sanctioning the proposal, blanks are left for the names to be adhibited to the fairs, these not uncommonly being dubbed after saints.*

* Acts Parl. Scot. vii. p. 112, appendix; viii. p. 442.

The holly hedge at the glebe was quite untouched by the severe winter's frost, but the yews in the churchyard had suffered a good deal. The church of Stenton has a nice appearance, both inside and outside, and its tower is almost a landmark in the district. It cost above £2000 and was opened by Dr. Chalmers, Oct. 4, 1829. It was built to supply the place of the old church, which was a quaint structure in the Norman style of architecture. The old tower is still standing, and part of the walls are left, thanks to the care of Mr Marjoribanks, who has done much to beautify the churchyard and preserve what old relics remained. There is a fine Norman doorway.

The Biel burying vault, which has not been opened for forty-seven years—since the coffin of Mrs Mary Hamilton Nisbet was placed there in 1834—till the previous day, was thrown open by Lady Mary's orders. In the vault were the following coffins:—(1). Nearest the east wall, of the Union Lord Belhaven. This was John the 2nd Lord, born July 5, 1656; died June 21, 1708. [John the 3rd Lord was drowned near the Lizard point, Nov. 17, 1721]. (2). John, the 4th Lord, succeeded his father in 1721, and died unmarried at Newcastle, Aug. 28, 1764. Neither of these have inscriptions. (3). James, 5th Lord. The inscription is "Rt. Hon. James Hamilton, Lord Belhaven, died 25th Jan. 1777, aged 72 years." He died at Biel. (4). William Hamilton Nisbet, Esq., of Biel and Dirleton, who died July 22.—(5). Mrs Mary Hamilton Nisbet of Belhaven and Biel, who died April, 1834. She built the new church.

The principal monument in the churchyard is that of the late R. C. Nisbet Hamilton, Esq., who died in 1877, by Sir John Steel, and pronounced by him to be one of the most elaborately carved granite monuments in Britain. It is in the form of an Iona cross, and the whole of the elaborate carvings were designed by Miss Nisbet Hamilton.

Time not admitting, the proposed visit to Presmennan had to be abandoned. It would require a day to itself. We are fortunate in having a paper from the Club's former member, Mr Archibald Hepburn, formerly of Whittingham Mains, now of Ramsbottom, Manchester, on the birds of that locality.

At four o'clock the company partook of dinner at the St. George Hotel, Dunbar, the chair being occupied, in the absence through indisposition of the president, by the Rev. J. F. Bigge, M.A., Stamfordham, while Mr Charles Watson, Dunse, discharged the

duties of the vice-chair. On business being resumed Canon Greenwell called attention to the state of Dunstanborough Castle, and, referring to the recommendation made by the Club after the Embleton meeting, said nothing had yet been done in the way of repair. St. Margaret's Tower was tumbling to ruin and might at any time disappear. He thought that if the Club were to call the attention of those in whom the property was vested to it, something would be done. He urged the Club to take action in the matter. The Club also should take charge of all ancient monuments and ruins in their district, and recommend to the proprietors to take steps to preserve them. Canon Greenwell was glad to see the remains of the ancient church at Stenton preserved so carefully. It was an example which ought to be more generally followed. Mr Hardy read a paper by Mr Hepburn on "The Birds of Presmennan"; and also extracts from an elaborate paper, which must have cost an amount of thought and research, from Miss Russell of Ashiesteel, entitled "Notes on some Historical and Literary Matter bearing on the Works called the Catrail, and on the connection with them of the Harit's Dyke in Berwickshire." Miss Russell also sent photographic illustrations of portions of the Catrail, and a photograph from a cast in the Museum of the Society of Antiquaries, Edinburgh, of the inscribed stone found in the vale of Yarrow in 1807. The inscription on this stone, part of which only can be read, appears to contain the name of Nudd Hael or Liberalis, and the word Dumnogini which follows it probably connect him with the Damnonii whom Ptolemy places in that quarter, Dryan the son of this Nudd fought at Ardderyd.* The Rev. J. F. Bigge read some notes on the occurrence of some Birds in the South of Northumberland; and Mr Gray gave his "Notes on the effect of the recent Winter Storms on Birds and other Animals—November, 1880, to March, 1881," which were listened to with much acceptance. Mr Boyd exhibited three very small eggs, which had been found last year in a cup-shaped nest in Glen Lochy. In Mr Gray's opinion they were grouse eggs. It is nothing unusual to have a single "dwarf" egg in a nest, but it is certainly extraordinary to find three abortions of this description, and also an abortive nest. Mr Watson exhibited a specimen of the rare pied flycatcher (*Muscicapa atricapilla*) which had been got at Goswick in the last week of April.

* Skene's Celtic Scotland. i. p. 158, note. Four Ancient Books of Wales, i, chap. 10; Proc. Ant. Scot. iv. p. 539.

Mr Bigge mentioned that a woodpecker (*Picus viridis*) had been shot at Dyehouse, three or four miles south of Hexham. One was seen Jan. 22, 1881, within a mile of Stamfordham. Three, both green and spotted, were seen during spring in East Dipton woods, near Hexham. Mr Thomson mentioned that a male albino water vole (*Arvicola amphibia*) had been caught by a cat in the straw barn at Riddletonhill, in the parish of Maxton. The vole was of a beautifully pure white colour, and had red eyes. It had lost one of its fore legs, and was diseased in its body, while at one time it had been affected on the tail. Some years previously a vole of a similar colour had been caught near Heatherhope, by Mr A. Douglas, the Duke of Roxburgh's gamekeeper at Greenhill, Roxburghshire. Mention was also made of the capture, three weeks previously, of a Daubenton's Bat (*Barbastellus communis*, Gray), at Under Samieston. Daubenton's Bat is well-known about Dunbar, and in other districts of Scotland.

Captain Norman while recently fishing on Tweedside near Twisel found examples of the Edible Morel (*Morchella esculenta*) on Drepper Island. Dr. Stuart, who has made Hillside Cottage, Chirnside, quite famous by his successful cultivation of flowers, had brought many interesting specimens. These included a most remarkably fine *Aquilegia*, grown in an open border, and supposed to be a cross between *A. glandulosa* and *A. Witmanniana*. The flower was most superb in growth and colour—blue and white. Dr. Stuart had many specimens of *Primula Scotica*, *P. farinosa*, *P. Munroii*, *P. cortusoides*, *P. Sieboldii*, and many hybrid hardy *Primulas* and *Polyanthuses*; also new *Violas*, Cream of the Valley, a pale straw coloured variety, Mauve, of a delicately coloured mauve, and several other seedlings. Dr Stuart also brought some blooms of Fortune's double white Clematis. Mr W. B. Boyd had also a fine variety of flowers. Among them was a spike of the flower of the New Zealand flax, which at Ormiston this year has attained the height of nine feet. He had also a double wood Anemone, the Petticoat Narcissus, Double ditto, and *Trollius Asiaticus*. Mr Watson produced specimens of *Anemone Apennina*, which Mr Ferguson, writer, Dunse, had found in Dunse Castle woods growing with *A. nemorosa*. The usual toasts were proposed and honoured, and a vote of thanks was accorded to Mr Marjoribanks for the trouble he had taken to render the excursion enjoyable. A very pleasant evening was spent.

At this meeting the following were proposed and seconded as members of the Club :—The Right Hon. Lord Napier and Ettrick, Thirlestane Castle, Selkirkshire ; Dr. William Craig, 7, Lothian Road, Edinburgh ; Mr Robert Hutchison of Carlowrie, Linlithgowshire ; Mr James S. Mack of Coveyheugh, S.S.C ; and Rev. George Marjoribanks, B.D., Stenton.

GRANT'S HOUSE MEETING.

The second, which was also appointed to be the Jubilee meeting of the Club, was held at Grant's House (formerly Bank House), on Wednesday, June 29th. Though the Club had been instituted there in September, it was resolved to hold the Jubilee meeting in June, on account of the botany of the locality being in its best state at that time. The meeting was in every respect a success. The assemblage consisted of upwards of 80 members and their friends, and apologies were received from several others who were unable to attend. Those who were present, so far as could be ascertained, were :—the Rev. Thomas Brown, F.R.S.E., Edinburgh, President ; Dr. Francis Douglas and Mr J. Hardy, Secretaries ; Sir George H. Scott Douglas of Springwood Park, Bart. ; John Hutton Balfour, M.D., F.R.S., F.L.S., Emeritus Professor of Botany in Edinburgh University : Revs. J. F. Bigge, M.A., Stamfordham ; David Burns, M.A., Linlithgow ; J. Mannes Hamilton Nisbet Graham, Maxton ; Joseph Hunter, M.A., Cockburnspath ; Peter Mearns, Coldstream ; Robert Naismith, Chirnside ; John Orr, B.A., Berwick ; David Paul, M.A., Roxburgh ; J. Hill Scott, Kelso ; Robert Simpson, M.A., Stockbridge ; Adam Spence, Houndwood ; William Stobbs, M.A., Gordon ; and R. Hopper Williamson, M.A., Whickham ; Messrs Thomas Allan, Horncliffe House ; John Bertram, Howpark ; Henry Hunter Blair, Alnwick ; J. W. Blundell, Liverpool ; James Bogie, Edinburgh ; Robert G. Bolam, Berwick ; James Bowhill, Ayton ; John B. Boyd of Cherrytrees ; W. B. Boyd of Faldonside ; Andrew Brotherston, Kelso ; Robert P. Brotherston, Tynningham ; James Brunton, Broomlands ; William Crawford, Dunse ; William Currie of Linthill ; J. T. S. Doughty, Ayton ; Charles Douglas, M.D., Woodside ; George Brisbane Scott Douglas, Springwood Park ; Robert Douglas, Berwick ; John Dunlop, Norham ; A. H. Evans, Scremerston ; John Ferguson, Dunse ; Churchill Flintoff, Alnwick ; J. Greig, Renton ; William Grant, Grant's House ; James Heatley, Alnwick ; A. W. Henderson,

Cockburnspath ; John Hood, Oldcambus Townhead ; George P. Hughes of Middleton Hall ; W. A. Hunter, M.A., Dunse ; William T. Hindmarsh, Alnwick ; Edward Johnson of Tweedbank, Kelso, M.D. ; William H. Johnson, Edinburgh ; James Balfour Kerr, Kelso ; Robert Darling Kerr, Edinburgh ; Alexander Leitch, Fairneyside ; Peter Loney, Marchmont ; J. S. Mack of Coveyheugh ; J. F. Macpherson, Adjutant, B.R.V., Melrose ; Jonathan Melrose, Coldstream ; George Muirhead, Paxton ; F. M. Norman, Commander, R.N., Berwick ; Dr. John Paxton, Berwick ; James Purves, Berwick ; Robert Renton, Fans ; Henry Richardson, M.D., Berwick ; Frederick Lewis Roy of Nenthorn ; Francis Russell, Sheriff-Substitute of Roxburghshire, Jedbank ; John Sadler, Royal Botanic Gardens, Edinburgh ; William Shaw, Eyemouth ; Septimus H. Smith, Norham ; George Heriot Stevens, Gullane ; Charles Stuart, M.D., Hillside Cottage, Chirnside ; G. H. Thompson, Alnwick ; John Thomson, Kelso ; John Turnbull of Abbey St. Bathans ; Matthew Turnbull, M.D., Coldstream ; J. J. Vernon, F.S.A. Scot., Hawick ; Charles Watson, F.S.A. Scot., Dunse ; William Weatherhead, Berwick ; Robert Weddell, Berwick ; John Wilson, Chapelhill ; William Wilson, Berwick ; James Wood, Galashiels ; and Matthew Young, Berwick.

After breakfast the members and their guests divided themselves into companies for the day's excursions. One party went by conveyances to Edin's Hall ; a second at whose disposal Lady Stirling of Renton House placed her carriage, visited Pease Bridge, Dunglass dean, and Cockburnspath. A third group consisting of the President, Professor Balfour, Mr Sadler, Capt. Norman, Rev. Peter Mearns, Mr A. H. Evans, Mr W. Weatherhead and Mr Hardy, undertook to do the pilgrimage of the Club, by paying a visit to Penmanshiel Wood, which the President assures us was the scene of the first walk of the Club. On that day we were told that an adder (*Pelias Berus*) was captured, and that *Vicia Orobos* was discovered in those early years, at the post road side, near Harelawside wood, to the north of Grant's House, whence it has now disappeared. The note of the black-cap was heard in this wood, and the sedge-warbler's song came from the willow bushes both to the east and west of Grant's House. "Witch-knots" were frequent on some of the birches by the side of the public road. It is now understood that these are primarily occasioned by the irritation caused by colonies of mites

of the genus *Phytopus* that harbour in some of the leaf-buds, as was first pointed out by Miss Ormerod "Entomologist," x. pp. 83-86. In Penmanshiel Wood, *Pyrola media* was the plant of chief interest gathered. The places where it now flourishes were formerly covered with long heather free from trees, these open spaces having been planted up. On reaching the fields the President said that his attention had been drawn to the curious changes of positions in the flower-buds of *Spergula arvensis* or Spurrey, during the progress from their evolution till the seeds were perfected. From a drooping state, it erects its flower to be fertilized; that being accomplished, the stalk bearing the capsule is again bent, till the seeds are matured, and the stalk rises and scatters them abroad. The same provision exists in the chickweeds.

An extensive view of the Lammermoors was obtained from Penmanshiel. The sight of these familiar hills recalled to the President's recollection a popular weather proverb, connected with two of the most conspicuous, Cockburn and Dirrington Laws, which has never been in print.

"When Cockburn Law gets on its hat,
And Dirrington its cowl,
A' the herds o' Lammermoor,
Ken it will be foul."

In the early part of the Club's history considerable attention was paid to the preservation of these local sayings, and three or four papers were devoted to their being recorded.

After resting and a slight refreshment at Penmanshiel, the party took the Harelawside road towards Grant's House, picking up *Antennaria dioica* on the moor; and *Plantago maritima* near what was once the site of St. David's Cairn. An old flat moss on the left hand still carries its old British or Pictish name of Moss Maw, *i.e.*, the level moss. The same name still adheres to a moss in the hilly district to the south of Edinburghshire, once the country of the Strathclyde Britons, but afterwards encroached on by the Southern Picts. At the side of the wall near the effaced memorial which later times connected with King David, there used to lie a slab of greywacke stone hollowed out into a smooth circular concavity, like a shallow dish, which had come from among the stones, and remnants of old fortifications about the cairn. It might have been once used for husking big, or four-rowed barley. At the top of the field east of Grant's House, which was passed, nearly in the line of the upper wall, there were formerly a collection of camps and cairns, now entirely

swept away. It is desirable to record all such sites of the settlements of the ancient inhabitants, if their position can be ascertained, and have them mapped.

Accepting the kind invitation of Lady Stirling the party then went to Renton House. The immediate vicinity has been much beautified and improved of recent years, by the growth of young plantations, and by a new arrangement of the ground round the mansion house. The house commands a fine view of the valley of the Eye. The garden was visited, and excepting some of the hollies and more tender evergreens, had been comparatively uninjured by the frosts. *Grammitis Ceterach*, how introduced is unknown, mixed with the common Polypody, still thrives near the summit of a portion of the garden wall. The plants in the greenhouse and conservatory were bright and flourishing. Among the firs and pines planted to shelter the house on the west, *Pinus Austriaca* is taking the lead, and grows very robust. Before leaving the visitors partook of lunch.

A fourth party visited Fast castle and Dowlaw dean, which I follow by the aid of Mr Vernon. Driving over the moors ornithologists distinguished a considerable variety of birds, and among others, the carrion crow, the heron, the sparrow-hawk, the sedge-warbler, the lark, corn-crake, water-hen, missel-thrush, stone-chat, etc. Arrived at Dowlaw, the party divided, one half proceeding to the dean, and the other to Fast castle. This gloomy border fortress occupies a striking position upon a perpendicular rock projecting into the German Ocean on one side, and only connected with the mainland by a steep and very narrow path leading to the castle gate. At the present day there remains just sufficient of the ruins of the castle to indicate that it was a donjon tower of moderate size surrounded by flanking walls. [What Sir Walter Scott imagined of Wolf's Crag in the "Bride of Lammermoor," chap. x., has now been realized. About ten years ago, during a thunderstorm, the battlements of this tower were struck and rent by lightning, and what remains is a mere wreck.]

Both parties being reunited, continued the journey by the Pease Bridge and Cockburnspath Tower. Descending into the Pease dean from the bridge a great many species of ferns were observed, among which may be mentioned—*Polystichum angulare* very plentiful, also *P. aculeatum* and *P. lobatum*. The *Scolopendrium vulgare* and *Asplenium Trichomanes* are to be found here. Other ferns obtained during the day were *Asplenium Ruta-muraria*, *A.*

Adiantum-nigrum, *A. marinum*, *Lastræa dilatata* and *Polypodium Dryopteris*. Leaving Pease Bridge, they proceeded to visit Cockburnspath Tower, a ruined strong hold of the Dunbars, Earls of March. By order of the Privy Council in 1581 and again 1584, Archibald Douglas, Earl of Angus, was commanded, under pain of high treason, to deliver over to the King's officers, the castles of "Thomptalloun, Douglas, and Cokbrandispeth." The old fortalice is now in a toppling state; a large portion, twice in succession, fell during the autumn and winter of 1880-81, and the rest will surely follow, unless means are taken to preserve this relic of a bygone age. The approach to the castle from the east has been from a curious old bridle bridge, of which few suspect the existence, being hidden in the depths of the dean a little above the modern bridge.

Of the day's work accomplished by the fifth, and by far the most numerous party, Mr Thomson has given the detail, and as it wears the stamp of a fresh and vivid impression, I shall with slight alterations adopt it. This party walked from Grant's House to the Pease Burn mouth. "The ramble was most delightful. For perhaps a mile and a half the way lay along the road, with the railway on the left, and the splendid old natural wood on the right. This wood, which formed part of the original forest which once covered the banks in this part of the country, is composed mainly of oak, birch, hazel, and willow, (in the Pease dean partly of elm), and the gnarled appearance of the oaks is in itself a sufficient proof of its antiquity, while their great knotty roots upon which successive generations of oaks have grown were a study to the curious. There were also not a few bushes of sloe and juniper, and the ground was covered by interesting plants and shrubs. Most noticeable was *Rosa spinosissima*, whose pure white petals and yellow stamens and anthers lay in profusion on every twig of the parent shrub. The pretty yellow rock-rose (*Helianthemum vulgare*) was seen on every sunny bank, and the red bloom of *Lychnis diurna*, and the green bracken (*Pteris aquilina*) held almost undisputed sway up in the heart of the wood. By the roadside, and flourishing among the furze, brambles and raspberry bushes, or near the little marshy strips, were *Corydalis claviculata*, *Equisetum sylvaticum*, *Pyrola media*, *Luzula sylvatica*, *Valeriana officinalis*, etc. On our left the warbling of the sedge warbler (*Sylvia phragmitis*) was heard in a clump of stunted willows, at whose roots grew half developed

brackens, whose colour, owing to the peat was of a reddish yellow. The weather had been very severe upon the whins and broom on the slopes. The bushes were nearly all dead, and though this part of the prospect was not pleasing, the rich purple of the fox gloves (*Digitalis purpurea*), whose spikes shot every now and then up through the decayed branches, was decidedly so. At the south entrance to the tunnel is a plantation of spruces, which, like the firs in the whole course of the day's excursion, grew well, and seemed healthy like. Here also, as elsewhere this season, the hawthorn has blossomed very profusely, and though on the lower-lying grounds inland the blossom has given place to young haws, here where it is later the bloom was very fine. Beyond the north entrance to the tunnel we crossed the railway, and entered the Pease dean, a delightful and romantic rugged glen, beautifully wooded, and full of entrancing interest to the lover of natural history. On entering the dean there was a large display of *Geranium sylvaticum*, while in the course of a few yards we had *Ajuga reptans*, and *Lysimachia nemorum* was seen. Further on two goodly-sized trees of *Cedrus deodara* had been planted; one had grown fairly well, but the other had been dead for some time. Past the forester's lodge we struck upon a large patch of *Blechnum*, the plants composing which were very fine; and this was succeeded further on by a large bed of broad-leaved garlic (*Allium ursinum*).

The way leads by the banks of the burn, where it prattles down its stony bed, at times almost concealed from view by the luxuriance of the vegetation on its banks—the buckler ferns (*Lastrea dilatata*) of themselves forming a splendid shade. Rising above us is a large holly, which from one trunk sent up six or seven limbs to the height of about 50 feet. These, sad to say, were dying from canker. After walking along the open part of the path in the sunshine, we reached a large clump of spruce firs, which rise to a towering height, and were so thickly grown, that it was almost darkness itself in the heart of the group. The only plant growing among the 'needles' with which the ground was covered, was *Oxalis acetosella*. In the open we had plenty of *Scrophularia nodosa*. The blaeberries were plentiful on the sward up the bank, and *Orobus tuberosus* was frequently met with. While the stream continued to descend the path caused us to ascend the bank, at the top of which we found ourselves walking alongside a precipitous gully, the rugged rocks

rising almost perpendicularly from the water. Clinging with wonderful tenacity to every cleft where roots could be inserted were hazel, and mountain ash, and birch bushes, which judging by the vigour of their growth, seemed to thrive on their rocky home. [This deep winding fissure is called the Black Craig. Fresh-water flounders are said to have been caught in one of the deep pools of the burn here. At one time a flock of goats was grazed in the woods, and their night-fold, still known as the Goat Fold, is still traceable on the west side of the ravine. It was also the haunt of illicit distillers].

After walking along Aikieside 'Banks' past the woodman's cottage, through what was once an 'Apple haugh,' or orchard, the Pease Bridge was reached, a stone and lime structure spanning a tremendous gully, which had been hollowed out by the stream in the course of ages. From the parapet of the bridge the spectator looks down upon an almost unbroken expanse of leafy verdure, so magnificent was the foliage. Away far beneath, stray glimpses may be had of the stream, and in the north-east at the foot of the burn is the sea, calm and unruffled, and bearing on its placid bosom several ships, both under sail and steam. The scenery in the glen is most romantic, and the botanists were kept busy. Perhaps the best fern seen during the walk was *Polystichum angulare*, which thrives exceedingly in this locality. A splendid lot of plants of *Equisetum maximum* was picked up. One or two were over two feet high, and correspondingly large in the fronds.

On the way to the coast we pass the prettily situated old mill with its undershot wheel. Near the foot of the burn, and among a scrub of alders, willows, and an undergrowth of butter-bur were seen the *Argynnis Aglaia*, the common blue butterfly, (*Polyommatus Alexis*), and *Polyommatus Artaxerxes*, while flitting over the newly-mown hay were several of a commoner sort. [Plants of the white horehound sometimes grow here, and abundance of *Mentha viridis*]. When the sea-side was reached the weary limbs were stretched on a grassy slope, where there was a beautiful view of the high red cliffs and the wide expanse of sea. But the botanists were indefatigable, and while part of the company enjoyed the sea breeze and the fragrant weed, the diligent plant-gatherers pursued their vocation at the burn mouth. They brought back a very fine specimen of the horned poppy (*Glaucium luteum*); also the sea-rocket, (*Cakile maritima*), the sea

sandwort (*Honkeneya peploides*), the Scottish Lovage (*Ligusticum Scoticum*), etc.

The return journey was then commenced. One section of the company returned by the same route followed in the morning, while the other section,—all ardent naturalists—diverged as they thought proper in search of their treasures. On the railway slopes some splendid patches of *Iberis amara* were found, as well as specimens of the viscid groundsel (*Senecio viscosus*); while the wood-vetch (*Vicia sylvatica*), flourished in great abundance, including an almost white variety. In the wood above the tunnel the oak-fern (*Polypodium Dryopteris*) showed exquisitely fine fronds, while there had been abundance of *Anemone nemorosa*. The sun shone brightly during the time the walk back occupied, and though there had been a stray shower or two it scarcely served to damp the ground."

By three o'clock all parties had returned. Several members exhibited the contents of their vasculums containing garden flowers, or plants otherwise remarkable for their singularity. Mr Muirhead had a large collection of beautiful flowers, including *Phlox Carolina*, *Saxifraga Wallacei*, *Papaver alpinum*, *Meconopsis Cambica*, *Veronica rupestris*, *V. Verbenæ*, *Ranunculus bullatus plenus*, *Chrysobactron Hookeri*, *Lychnis viscaria alba*, *Delphinium nudicaule*, *Lychnis Lagasceæ*, *Campanula turbinata*, *Dianthus neglectus*, *D. glacialis*, *Silene alpestris*, *Linum Sibiricum*, *Geranium Armenicum*, *Erinus alpinus*, *Saponaria ocymoides*, varieties of *Helianthemum*, etc. Dr Stuart, Chirnside, had also some fine plants, including *Lychnis viscaria alba*, *Aquilegia cœrulea*, *A. chrysantha*, and "Borderer," a hybrid, *Salvia alpina*, *Anemone Pennsylvanica*, *Primula rosea*, (Afghanistan) *Achillea tomentosa*, *Erinus Hispanicus*, and var. *albus*, *Ourisia grandiflora*, *Lotus major flore pleno*, *Bellium cœrulescens* (Mount Atlas), *Campanula speciosa*, *Vicia sepium flore albo* (from Berwickshire), *Saxifraga ceratifolia*, *S. Wallacei*, *Silene alpestris*, varieties of *Digitalis*, etc. Mr R. P. Brotherston shewed some orchid blooms from Tynningham, which were especially fine. They included *Epidendrum vitellinum majus*, a very fine variety, with a long spike of flowers; *Odontoglossum vexillarium*, a large light coloured variety; and *Cattleya crispa*, with a very dark lip—a fine plant. Mr Andrew Brotherston brought specimens of the noxious water-weed, *Anacharis alsinastrum* or *Elodia Canadensis*, which he had gathered in the Teviot at Roxburgh Castle, and again above Roxburgh Bridge. There is a slight

difference between the plants in tidal waters, and those in the Teviot. The leaves of the latter plants are obovate, while under the influence of the tide, they are oblong. There were several other collections of plants. Sheriff Russell stated that he had plants growing in his garden at Jedbank of *Goodyera repens*, *Stellaria glauca*, *Listera cordata*, and *Linnæa borealis*, plants of which he obtained at the Gordon meeting last year. *Boletus luridus* had been picked up on the journey.

Mr Stevens, Gullane, shewed a sketch of an earthenware urn recently discovered at Stobshiel, near Leaston, in Humbie Parish, East Lothian. The encircling ornamental bands were of a lozenge pattern and not chevrons. In the beginning of January, 1882, another East Lothian urn containing calcined human bones, was found while ploughing on the farm of Quarryford, on the Yester Estate of the Marquis of Tweeddale.

In a field near the Railway Station a large marquee had been erected, gaily decorated for the occasion with flowers, evergreens, and bannerets, conspicuous on one of which appeared the words, "Welcome all to Grant's House." A rustic arch of flowers had been constructed over the gate of the pasture field in which the tent stood. Inside the tent on the tables was a tasteful display of cut and pot plants, for which and many other obliging favours during the day the Club owes special thanks to Lady Stirling. Precisely at half-past three the chair was taken by the President, who called upon Dr Francis Douglas to present Mr Hardy with a testimonial of respect from the members of the Club. Mr Hardy's reply took the form of a paper in which he gave an account of some of his experiences as a Naturalist, with reminiscences of many of the friends to whom during the prosecution of his studies he had been introduced.

After dinner the following were formally proposed as members of the Club:—The Most Honourable the Marquess of Tweeddale; Mr John Scott of Gala; Rev. C. E. Bowden, St. Columba's Church, Edinburgh; Edward Johnson, M.D., Tweedbank, Kelso; Rev. John Orr, Berwick; Mr R. P. Brotherston, Tynningham Gardens, Prestonkirk; Mr. Edward Willoby, jun., Berwick; and Mr Joseph Wilson, solicitor, Dunse.

The following motion of which notice had been given by Mr John Thomson, was then put from the chair and carried:—"That the Club approve of a proposal to reprint the first volume of the Proceedings as a private enterprise, and cordially recom-

mend the members to avail themselves of the opportunity to supply themselves with copies."

In proposing the usual toast, "Success to the Berwickshire Naturalist's Club," the President, the last survivor of the originators of the Club, gave an interesting account of its origin and history, and dwelt particularly on the wish of its founder that it should be a non-pretentious and a social Club, and congratulated the meeting that his ideas should have hitherto been so well carried out. The "Lady members of the Club" having been duly honoured, this memorable gathering dispersed.

REDESDALE MEETING.

The third meeting was held on Wednesday and Thursday, July 27th and 28th, at Elsdon and Otterburn in Redesdale, one of the most sequestered districts in Northumberland. Among those present were:—Sir Walter Elliott of Wolfelee, K.C.S.I., LL.D., F.R.S.; Mr Hardy, Secretary; Revs. T. G. Baillie, Elsdon; J. Elliot Bates, Milburn Hall; M. A. Bettison, Otterburn; J. F. Bigge, Stamfordham; William Stobbs, Gordon; J. Walker, Whalton; C. Wesson, Alnwick; Messrs. Joseph Archbold, Alnwick; Ephraim Arkle, Carrick; Thomas Arkle, Highlaws; J. R. Arkle, Carrick; Robert G. Bolam, Berwick; John Broadway, Alnwick; William Currie of Linthill; Samuel Donkin, Bywell; — Elliot, Arkleton; Robert Faill, Dunshiel; William N. Fraser of Tornaveen, W.S., Edinburgh; G. Gibson, Alnwick; William Thompson Hall, Dunns Houses; W. T. Hindmarsh, Alnwick; John James Horsley, Alnwick; Alexander Main, M.D., Alnwick; Hugh Miller, F.G.S., Elsdon; J. L. Newbigin, Alnwick; James Nicholson, Murton; Dr. John Paxton, Berwick; Adam Robertson, Alnwick; Dr. E. C. Robertson, Otterburn; John Russell, Edinburgh; John Thomson, Kelso; J. P. Turnbull, Alnwick; Thomas Turnbull, Lilliesleaf; F. R. Wilson, F.S.B.A., Alnwick; James Wood, Galashiels, etc.

The place of meeting was at Elsdon. Many from beyond the Borders came by train to Knowesgate and Bellingham Stations, where conveyances awaited them, while others mounted or driving came from every point of the compass, a brake and four conveying a large party coming from Alnwick by way of Rothbury.

The contingent that arrived at Knowesgate, met there the conveyances that their Redesdale friends and others had kindly

provided, and proceeded under the guidance of Mr Thomas Arkle and the Rev. J. F. Bigge to cross by the Newcastle Road the long stretch of high moors between the Railway Station and Elsdon. The sandstone upheavals are not very high. The boggy tracts feed small streams that cut down to the subjacent sandstone. A more abrupt congeries of rocks on the left hand is called Wolf Crag, bearing witness in its designation to the primeval animals of the wild, with which the Umfraviles, Lords of Redesdale, had to combat for the conservancy of their rights, and doubtless a favourite meet of the wolf hunters of pristine times. Similar to it at the present day, where these hunts are still conducted, we read of the forests of Brittany, where one—that of Conveau—is described as “a forest of rock, scrub and heather; the last waist deep, and affording a rare cover for the wolves, foxes and deer that frequent it;”^{*} all which this might well be seven or eight hundred years ago. Here we enter Elsdon parish. Outcrops of limestone succeed, which supply road metal, and yield a better pasturage, Ottercaps being regarded as one of the best grazing farms on these heights. These “green gairs,” and the patches of marshy ground broke up the continuity of the heather, and mitigated the sombre moory aspect. Fuel is procurable in the peat mosses. British camps are traceable on some of the hill-faces, and the more projecting swellings are capped with modern piles of stones or ancient commemorative cairns. At length, encircled by hills with green slopes extending down into low meadows, the valley of the Rede appears. Redesdale is a quiet pastoral valley, remarkable at this season for its verdure; its features are gently moulded, and mostly rounded, with no very salient prominences. A dark massive mountain, with a stone summit rises in front, called Padon’s or Peden’s Pike, so named from Mr Alexander Peden, one of the most noted of the outed Scotch Ministers in the reign of Charles II., who held conventicles on it among the wild borderers. In his life it is recorded that he was near the Borders in 1679. A stone still known as “Peden’s Pulpit,” at the apex of Ruberslaw in Roxburghshire recalls the same or similar visits. *Pike, crag, law, head, know, dod, edge, rig*, it may be observed, predominate in the nomenclature of the Redesdale eminences. In the Harbottle direction the blue pike of Darden is pre-eminent, and another heath darkened elevation called the King’s Dod. This ridge coalesces

^{*} Wolf Hunting and Wild Sport in Lower Brittany, p. 14.

with the Simonside Hills, whose craggy front is turned from us. Afar off Cheviot heaves its mighty ridge, several of its cairns, and even the deep impressions in its sides being very distinct. Along the continuous mountain wall of lesser altitude that forms the Border line we can also pick out the scaurs and cleughs, some of them pale hued, others in gloomy shade. Cushat Law is the bulkiest looking of the intermediate heights, having space to exhibit itself, but there are heathery cones of no trivial dimensions, that vie with it, and the other formidable protuberances of that billowy land. The woods at Biddleston are easily recognisable, and with a little spare time many other notable specialities might be determined in the far extending landscape here mapped out. As we pass on we begin to familiarise ourselves with the farm-places and the dwellings distributed throughout the valley, or on its sloping sides; with the well-marked belts of road, Watling Street being one, that cross the levels, surmount the less ambitious hill-backs, or dive into the winding passes; with the clumps and lines of wood, which, however, are rather sparse; and above all with the wealth of glittering waters that enrich the meadows.

Before the moors are left, wheat-ears perched on the stone-walls, which by the bye are excellent, and the telegraph wires, shewed that their summer breeding places were in the neighbourhood. Larks and pipit-larks arise at intervals. The pipit-larks even nestle in the Mote-hill at Elsdon, where one with a morsel of food in its bill, was afterwards seen to be extremely concerned about the movements of a small dog that had approached too near the spot where its young were concealed. Descending to Raylees burn, the farm place of Ravenscleugh near the opening of a ravine, again testified to the equivocal character of some of the former members of the indigenous fauna. "Capability Brown," the landscape gardener, was a descendant of the Browns of Ravenscleugh. There are hawthorn bushes not very well grown, and sore scourged by the frost, at Raylees. Alders and butter-burs flourish by the stream. The Rev. J. Hodgson will have us to believe that Raylees is derived from *Rae* or *Hrae*, a carcase, and that it signifies the field of the slain. But did it not occur to him that it carries the name of the wild roe, once plentiful hereabouts? For does not the oldest set of the "Battle of Otterburne," say,

"The roo full reckless there sche runnes
To make the game and glee?"

"As wild as the rae," is a well-known Border phrase; on Cheviot we have the Rae (or Roe) burn; and Raa moreover, is the original A.S. form of the word.

In descending the next declivitous hill, Elsdon village appears opposite, withdrawn within an angle of the hills which back and shelter it, and occupying in a straggling manner a considerable space, somewhat raised above the level meadows, through which runs the Elsdon or Monk burn. It is a small, somewhat decaying place, with the houses—most of them slated—chiefly on the one side of a very large village green, on which there were several collections of geese. The venerable church with its field of graves in front is placed on a more elevated position at the top of the green. Higher still among trees the old steep-roofed Border tower, now and for long, the Rectory, crowns the ascent; while opposite it and on a level with it, across the Elsdon or Carrick burn, is the double Mote hill, encircled by a stone dyke. The subsidiary valley below Elsdon is very flat and this continues to the vale of the Rede. In the meadows preserved for hay, there is a profusion of the blooms of the betony (*Stachys Betonica*). The pied wagtail haunted the burn sides. There are small colonies of sand-martins on the sandy or clayey banks of the streams. The colour of the soil is yellow, where displayed in fissures. At Otterburn the same kind of soil occurs, derived from the waste of the yellow sandstones of the district; apparently of little agricultural value. The Monk burn is made up of two others which here unite—Carrick or Elsdon burn from above the village, and Whiskersields or Tod-holes burn from the east. When we are across, the village property in the green sidings of the road commences; and it was here the Midsummer bone-fires were long continued to be kindled, even in Mr Arkle's boyhood, when he attended Elsdon school.

The name Elsdon is a corruption of Elisden, Ellesden, or Elledene, for so it is written in the oldest forms. The Rev. Mr Hodgson (*Hist. of Northumberland*, Part 2, vol. i, note pp. 86, 87) tries to establish that this signifies the *valley of waters*; and one of the rectors, Rev. Charles Dodgson (1762-1765) would have agreed with him, for he alleges that the view of the place from the hill on the south "gives a person an idea of a few houses built in a boggy island," (*Table Book*, Leg. Div. i. p. 234). Mr Hodgson is correct as to the *dene* not being *dun* or *don*; but the personal name Ella has a very good handle; besides it is the

traditional and probably far-descended name, only Ella instead of an early settler is popularly said to be a Danish giant, and a terrible robber, who dwelt on the Mote hills. Elsdon is also said, on a traditionary basis, and from the church being dedicated to St. Cuthbert, to have been one of the retreats to which the body of the saint was conveyed, during those years of dangerous inquietude, consequent on the Danish invasion of Northumberland, A.D. 875.* Elsdon was part of the gift which William the Conqueror bestowed on the first of the Umfravilles, "Robert with the Beard," on the condition of keeping the country free of wolves, and defending it from the King's enemies, by the same sword with which William entered Northumberland. This family held Redesdale "per regalem potestatem." The dispossessed Anglo-Saxon owner was Mildred son of Akman. In the reign of Henry III., this extensive power was wielded by two chieftains, a father and a son, both named Gilbert. The vill of Elisden was then held from them in fee by 1. Richard fitz William, who had a carrucate of land by the 20th part of a Knight's fee. 2. Robert de Umframvill, who held another carrucate on the same terms. 3. Hugo Payn, who held a third carrucate, which seems to have exhausted the arable land, paid one pound of pepper.† From an inquisition 29, Hen. III. 1244, we ascertain that the advowson of the Church pertained to the Umfravilles, Lords of the Manor.‡

After breakfast at 12 o'clock, which was requisitioned at two different inns, the members were conducted round the church and its characteristics were explained by Dr Robertson, Mr Thomas Arkle, and by Mr F. R. Wilson, architect, under whose superintendence the church had been restored in 1877. The restoration has been very judiciously performed, and the church may now be termed an elegant and comfortable place of worship.

The church is cruciform, and was erected about 1400. The north transept is called Anderson's porch, and the south transept, Hedley's porch, after clans of those names. There is a fine arcade with side aisles, in the nave, and west sides of the transept. In the restoration a flat roof was removed, and a vaulted substituted. The only remains of a still older church, are two pilasters in the west gable of early Norman design—about 1100—and perhaps the two small windows in the west ends of the aisles, from whence perhaps in the "riding times" an arrow may have

* Raine's Hist. of North Durham, p. 71, Note. † Testade Nevill, p. 385.

‡ Calend. Ing. p. m. i. p. 3.

whizzed. On the pillars near the door are deep scratches supposed to be marks made in sharpening arrows, before leaving church for arrow practice. Others of these marks are ascribed to the sharpening of the swords of the warlike villagers. The windows in the church are fine, and are of 14th century workmanship. The large window was put in some 50 years ago. In the north transept are some monumental slabs, one with the Umfraville arms, a cross with crosslets; another with a shield (a stag upon it) a cross and sword; and others to former Rectors and members of the Reed family. In this transept was standing against the wall an old Roman monumental tablet, removed by Archdeacon Singleton (once Rector here) from Bremenium. The inscription is nearly worn out now, but is thus given in Hodgson as translated by him: "Julia Lucilla saw that this stone was erected to * * * * her very meritorious husband, who was an inspector under the surveyor of the Flaminian Way, and a pensioner under the surveyor of the public works. He lived 47 years, 6 months, 25 days." There is a tablet in the chancel to the family of Reed of Troughend, on which a scroll asserts that the family has been seated in Redesdale for the last 900 years. There are also monumental slabs for Howards of Overacres, (decendants of Lord William Howard) formerly lords of Redesdale; and also for Benefactors of the Poor of the Parish. The sedilia for the ancient priests to sit in during service still exists in the chancel, and a piscina was laid bare in the south transept during the restoration. In forming a chamber for the harmonium in the north chancel wall, the remains of a leper window were brought to light. In it, and used as walling stones were found some burial slabs with a dagger on them, denoting the male sex. Two slabs were also to be seen above the doorway into the church, with on one a dagger, on the other a pair of shears, the sign of a female. A coat of arms with three fishes was noted. The stone-coffins outside the church, were removed from the chancel some years ago. There are some remarkable figures, as well as singular inscriptions on the tombstones outside; but there are few old country churchyards that do not realise the "uncouth rhymes and shapeless sculpture decked" of the well-known "Elegy."

The immense number of skulls and other bones found under the floor of the church during the restoration was brought under notice by Dr. Robertson, and was afterwards discussed at Otter-

burn in a paper which he read. Another great accumulation of bones under the floor of a church was mentioned by the Rev. Mr Dobie, as having occurred at Ladykirk, of which he has sent me a notice. We have also to bear in mind the case of Gordon as narrated by the Rev. William Stobbs on the previous year, and the zest for sepulture within the precincts of Newminster Abbey, of which I by no means exhausted the list that might be gleaned from the Chartulary (See the present vol. pp. 227, 257-9). It was no common sight to gaze upon the remains of the warriors who fell at Otterburn. The skeletons of three horses' heads, which were discovered at the same period, built up, as if specially sacred, in a chamber of the church tower, were shewn in a cellar behind the church, and were placed in the same pyramidal form, they were in when discovered. Dr. Robertson's learned paper accounting for their presence will be read with much interest. Some support may be given to the idea there hinted at, that they were connected with offerings made at the dedication or erection of the church, or it may be at the celebration of some festival of the patron saint. Without forming any decided opinion I may cite here three instances in which this kind of immolation is spoken of. When Alexander I. of Scotland restored to the church of St. Andrews, the lands called the Boar's Chase, with many privileges, he accompanied this benefaction, "with the strange gift of a royal Arabian Steed, with its trappings and silver shield and spear, which the king led up to the altar, and a splendid suit of Turkish armour."* The inference from Fordun's version is that this was a token of investiture or taking seisin.† At the interment of one of the Nevilles, Lords of Raby, in Durham Priory Church, his war-horse, armed in battle array, preceded the body of its master. The horse was given to the church as a portion of its owner's mortuary payment.‡ In 1164, St. Aeldred of Rievaux during a journey into Pietland, happened to be at 'Cuthbrichtis Kirche' at Kirkcudbright, as it is now called, on the feast day of its great patron. A bull, the marvel of the parish for its strength and ferocity was dragged to the church, bound with cords, to be offered as an alms and oblation to St. Cuthbert.§

* Skene's *Celtic Scotland*, i., p. 451. † Goodal's *Fordun*, i., p. 340.

‡ *Journal of Archæological Institute*, vi., p. 436.

§ Joseph Robertson, *Miscellany of Spalding Club*, v. pp. 56, 57, from Reginald of Durham's *Miracles of St. Cuthbert*, quoted in Dr. Mitchell's *Past in the Present*, p. 275.

If ever such practices, relics of the old paganism, were manifest here on such occasions, a valuable or favourite steed was peculiarly appropriate, the great uncultivated wastes of the parish having formerly been the breeding places of the stock of horses of the potent lords of the valley of the Rede, and they being the church patrons, might possibly be the donors. This appropriation of the Redesdale forests to horse-breeding we learn from the chartulary of Kelso. Odenelle de Umfraville, who was alive in 1173, granted the monks of Kelso the tithe of the foals of the whole of his *haras* or stud. This was confirmed by Richard de Umframville his son about 1220, who in presence of his whole court at Whelpintun commands his servants to give effect to his instructions. Gilbert de Umframville, about 1228, confirms his grandfather's grant, and adds in addition the tithe of the foals within his forest on the western part of Cotteneshope, and the foals marked with the brand of the monks were allowed to follow their mothers for two years. The gifts were still further confirmed at "Oterburne," about 1250 by William de Umframvill. These were the bounds of the forest in Redesdale liable to the tithe: "from Blachope as far as into Rammeshope, and from Rammeshope as far as into Harhope, and from Harhope as far as into Goldingpottes, and from Goldingpottes as far as into Flexlie, and from Flexley as far as Caldelaw above Wilkewde, and so even into the head of Yerdehope"; a most extensive tract. Roger, rector of the church of Ellesdene having laid claim to these tithes, as the property of his church, was, after an appeal to the Pope and a commission of inquiry appointed at York, compelled to relinquish his contention, and abjure any right to which he might pretend, before the Abbot and convent of Kelso on St. Clement's day, 1228.* In whatever light these facts may be regarded, they at least testify how well calculated this parish was for rearing young horses; and how the attention of a considerable number of interested inhabitants would be absorbed in them.

The parish register and minutes date back to the 17th century. Some of the more curious extracts Mr Arkle has promised to arrange for the Club's "Proceedings," when there is room for them.

A very large company assembled on the Mote hills, several ladies from the Rectory also being present, when Mr Arkle proceeded

* Liber de Calchou, pp. 261-265. Bannatyne Club. This is not mentioned in Mr Hodgson's History.

to point out their peculiarities, and state his theory of their object, aided by a plan and sections, which he had prepared. Apart altogether from Mr Arkle's statements, the opinion that I and some others formed from the slight inspection that as strangers we could make, was that the Motes, which are combined at the base, although double-topped, were *Kaims*, or accumulations of drift, which have been subsequently dressed and modified by human agency; that they were possibly once occupied as a hillfort; burials also may have taken place in them, as they have the barrow form; and that as the name indicates they were employed as a place for holding tribal councils; but as to whether a British or a Saxon people held these comitia, or both at different stages of history, there will be always room for differences of opinion.

Dr Bruce in the 3rd Edition of the "Roman Wall," thus speaks of them. "'The Mote Hills' of Elsdon are marvellous works of an unknown antiquity. Even upon the supposition, which is highly probable, that their constructors have availed themselves of mounds thrown up by diluvial action, these fortifications indicate a people capable of great thoughts and resolute acts.

"Although the 'Motes' have no resemblance to a Roman camp, it is certain that the Romans occupied them. Several Roman remains have been found in them, the most important being the very curious inscription," on two stones now at Durham, which reads as follows:—"To the god Matunus for the safety of [Antoninus Cæsar born] for the good of the race of mankind, by order of . . . imperial legate and proprætor. It was erected and dedicated by Caius Anlus Cæcilius." (?). "The name of the emperor for whose welfare the dedication was made, and to whom is applied the proud but not unprecedented title of 'born for the benefit of mankind,' is lost in consequence of the fracture of the stone. There can be little doubt, that one of the Antonines, probably Caracalla, was intended. The god Matunus is not elsewhere mentioned."

After a discussion on what we had been listening to, Mr Arkle in conclusion gave glowing utterance to the sentiments which the storied spots which we were visiting, with their lessons out of the dim past, were so calculated to elicit. I am happy to be able to give in full his appropriate summing up.

"We have no time for any lengthened reading here, but it may perhaps assist us in remembering the old and interesting objects we have examined, if I venture to make a few remarks on, or rather allusions to them at the present time.

We have heard of the visit of the Monks of Lindisfarne to Elsdon, A.D. 875, with the bones of St. Cuthbert, and this event forms a very important epoch in the history of the town. Let us turn our attention to this period, and for a moment take a retrospective glance at the changes which have taken place. Let us picture to ourselves the village and locality as they were in the ninth century, and see how much of the Elsdon of the present day belongs to the time when it had the honor of being the resting place of the great northern saint. The camps occupied the summits of the neighbouring hills, and the huge cairns on Peden and Darden Pikes covered the bodies of brave warriors, that for ages had reposed beneath their kindly protection. The Mote Hills no doubt raised the wonder of the wandering monks, for the date of their construction and the purposes for which they were intended were probably then as great a mystery, as they are at the present moment. The tablet dedicated to Matunus for the safety of Antoninus Caesar, born for the good of the human race, had become imbedded here; but the touching memorial which Julia Lucilla had left to the memory of her meritorious husband might then have been found near the moss covered ruins of the deserted Bremenium, or hid underneath the debris of that ancient city.

The church of those days (if the village enjoyed the blessing of a church) would be a very unpretending structure. Its walls might have been of mud, or like Grinstead (where the bones of St. Edmond are said to have rested) of rifted oak, and its roof of rushes in imitation of the reeds with which Lindisfarne was covered two centuries before. Certain it is that not a fragment of the present church was then in existence; even its predecessor, the building of which the two west end columns are the only remaining vestiges, had not yet been erected; and if the stones composing the durable Border Tower which overlooks the village had still to rest undisturbed for centuries in the Flatt Dene, it were vain to look for remains of such frail habitations as afforded a precarious shelter to the fugitive Monks and their hospitable entertainers.

Though the works of man have in a great measure passed away, little change has taken place in the natural features of the country, which even now presents the same general outline of hill and dale as it then did; only in the earlier period the valleys were luxurantly covered with natural wood, and the sweet though feeble music of the lark would be drowned by the more powerful chorus issuing from the grove.

The geological epoch when Elsdon burn probably swept round the north west side of the Castle was long past, and the brook was quietly flowing in its present channel. No essential change in its course has taken place during the ten centuries which have elapsed since the important visit of which we have been speaking, and opposite the Mote Hills its channel has not been deepened more than four feet whilst thirty generations have sported on its banks.

Well may its murmurs, in the beautiful language of Tennyson be supposed to say—

‘ And onward thus I ceaseless flow,
To join the brimming river;
For men may come and men may go,
But I go on for ever.’”

The company next adjourned to the mediæval peel, now the rectory-house, which was kindly thrown open for the occasion by

the rector, the Rev. T. G. Baillie, who along with Mr F. R. Wilson pointed out and explained whatever was noteworthy. The tower stands in a commanding situation, and from the summit which is attained by a spiral staircase, there is an extensive view of the vale of the Raelees and Monk burns, and the country opposite. About the tower are many ancient remains, one being a stone from Bremenium, which had been rescued from being a gate post. Who was the erector of the tower is not quite certain. The shield in front of it carries the arms of the Umfravilles, a cinquefoil with an orle of eight cross crosslets; and above it the helmet, surmounted with a cinquefoil for the crest, is supported by two wolves, each holding a sword upright. Below the shield are letters in the old English character supposed to mean "R. Dominus de Rede, and are probably intended for Sir Robert Umfraville, a distinguished member of this family, who died in 1436." Others suppose that Sir Robert Taylboys is the person indicated. The castle has undergone a great change. As a lively writer says, "'Cedant arma togæ' was the notice to quit served upon the warlike tenants of Elsdon tower, when Cheviot Hills ceased to be the boundary between two hostile nations. The occupation of the Lord of Redesdale was gone for there were no longer wolves in the county, nor enemies of the king to encounter within the four seas; and the Border rider, clad in a rusty steel jack and armed with a long sword, stalked out, and the rector having on a new cassock and a clean band, walked in, and hung up his goodly beaver in the hall, where the former tenant used to hang up his helmet."*

By the waysides on leaving the village for Otterburn, the common burnet (*Sanguisorba officinalis*) was growing. The Rev. J. F. Bigge found in one of the inn gardens a form of the common tansy with much subdivided foliage, which he had long observed grown there. In Scotland it is called "gingerbread." At Over-aces farm, now the property of the Duke of Northumberland, a party left the general company, and ascended the hill above it, called in Armstrong's Map, "Coolaw hill," but in Mr Arkle's plan of the parish, "Colwell hill," to examine an extensive British camp on one of its summits. In the moist half-wild pastures, which are given to grow *Nardus stricta* far up, several plants of the adder's tongue fern (*Ophioglossum vulgatum*) were gathered. The camp was double-ringed, but not so strong in the ramparts

* Chatto's Rambles in Northumberland, pp. 109, 110.

as those occurring among the Cheviots near Wooler. A hut-circle fifteen feet in diameter was still traceable. Mr Arkle has drawings and measurements of this camp. There is a far view from it. A wide extent of grazing ground lay to the north, and upon it on a lower height another similar camp, called Fawdon Camp, was visible, which Mr James Ellis of Otterburn was of opinion was that occupied by the Scots on the evening previous to the battle of Otterburn; and he also held that the scene of conflict lay along the slopes and unequal ground between these two ancient camps. Lower than the last, but more distant, and nearer the Otter burn, the farm place of Gersonfield, marked "Grasing Field" by Armstrong, was pointed out—modern—but carrying the name of another steading once in the occupancy of the "fause-hearted Ha's" (Halls) who betrayed Percy or Parcy (Percival) Reed of Troughend, a keeper of Redesdale, to a band of moss-troopers of the name of Crosier, who slew him at Batinghope, near the sources of Rede-water. The plants gathered in the descent were chiefly such as grow in moory soils. *Myosotis repens* appeared in the pools. After crossing a ravine some deserted coal-pits and lime-kilns were passed. There was not time to attend to the geological features of the district, but Professor Lebour's paper on the subject makes ample amends for what was gone over in a rapid tramp. Gaining the Newcastle road, the wild burnet and betony appeared by the way-side, and likewise a plant of the figwort (*Scrophularia nodosa*). Celandine and Solomon's seal were cultivated alongside the houses that we passed. White and red foxgloves of the wild sorts are great favourites in the vicinity, and at Otterburn the throatwort bell-flower and the French willow contributed to the stock of cultivated flowers. A single purplish rocket (*Hesperis matronalis*) some fine coloured phloxes, and a variety of Mimuli, were frequent ornaments of the front gardens in the village.

The party which preceded visited Otterburn Tower, which those coming later did not see till next morning. This is an imposing and handsome modern mansion, but it includes within its walls the old peel tower, that withstood all the efforts of Earl Douglas and the Scots to capture. It was then "tolerably strong, and situated among marshes." In the entrance hall are three very interesting Roman altars, as well as a fine collection of stuffed birds, which besides hawks and moorland species, include a variety of waterfowl shot by Mr James; among others the Pintail

duck and the Gooseander and Dun-diver. There is a very fine wild swan shot in the Rede, by his son Mr John C. James and Dr. Robertson. Mr James himself had shot here the *Picus minor* and the Solitary Snipe. Ptarmigans, Woodpeckers, Capercailzie, French partridges, Indian pheasants, birds of Paradise, &c., make up the residue. The ground in front is prettily laid out in terraces. I did not notice any particular new border plant. The Phloxes were gay, and the scarlet *Lychnis chalconica*, of which there was also a white variety. Some shrubs had been victimised by the winter, and several of the trees were severely touched. This party also visited Otterburn Church, which has been only recently erected. The Misses Davison of Lemmington Hall and Mrs Askew of Pallinsburn built the church, in 1857, and left a fund which provides a stipend of £200 a-year to the curate, who is appointed by the rector of Elsdon as patron. It is in the decorated style. It has many fine stained glass windows, the gifts of Miss Reid of Old-town, Lord James Murray, etc. There are a few graves in the recently-consecrated ground, but only one tombstone—a fine granite monument, which marks the last resting place of the first curate, the Rev. Timothy Wearing. In the font is a carved stone brought from Hexham Abbey.

Otterburn is a small clean village, with good substantial houses having slated roofs. The trees by the side of the Otter burn, in the low lying haugh, had been much affected by the hoar frosts of the past winter. Oaks, elms, and ashes had their stems muffled with tufts of twigs, and large leaves, while the tops and outer branches were destitute of foliage. In driving to the battle-field, hay-making was seen to be at the present as essential a branch of rural economy, as it was at the period that the old ballad speaks of, when “the Doglas and the Persè met,” August 15th, 1388. There is a considerable ascent over ground rough with bent (*Nardus stricta*) before the apex of the battle-hill is reached. Wood anemone springs up in some profusion at places. There was a remnant of old wood on the west side. Most of the trees were mountain-ashes, two of them were sore broken; for being a stiff, obstructive, twiggy tree, the mountain ash is often overturned in a gale. One of the trees grew on the British camp which the Scots occupied. The Scots, Froissart relates, “made huts of trees and branches, and strongly fortified themselves.” Wood would be more within their reach then than now. The

series of ballads on the battle bear the impress of traditions of the sylvan attributes of the neighbourhood.

“The birds fly wild from tree to tree.”

“The rest were slaine in Chevy-Chase,
Under the greenwood tree.”

“Then on the morn they made them beerys,
Of byrch and hasell greye.”

“O bury me by the braken bush,
Beneath the blooming breer.”

The old British camp is double-ringed, and is now divided by a stone dike. The slopes were grassy, the “lilly lee” of the ballad, but the summit is sufficiently elevated to carry heather. This is the “bent sae brown,” on which the Scots “lighted high,” “and threw their pallions down,” securing a defensible position, as well as a free look out above the woods, towards the Newcastle road whence the approach of the English might be expected.

We were fortunate to have Mr Arkle’s guidance, as he had studied the ground minutely, when he surveyed it to construct the map contributed to Mr Robert White’s *History of the Battle*. It was next to having with us “the old man eloquent,” who wrote the book; who, had he been alive, would, I am most sure, have been proud to have accompanied us in our pilgrimage, even to the high places of the field; and in our hearing “fought his battle o’er again.” But, alas!

“Fate drives us from the fields of youth,
And no returning step allows.”

The last time I met the author, this publication was one of the subjects of conversation. He intended, for he looked hopefully forward to many days to come, to re-issue the now scarce work, as well as “Bannockburn,” in a popular form, to keep alive the spirit of patriotism in the rising race.

Being beyond the season for singing birds, a great silence prevailed. A ruinous peel, rent into two dark columns, stood at a little distance on the left, and Davy-shiels noted in the *Lay of the Redewater Minstrel* for its “gowks,” was pointed out in a northerly direction. In the lawless stage of *Border History* “Davie scheill” had unenviable attractions for the Scotch reivers. (See p. 224, note of the present vol.) But that has passed away, and we have now the better times of which the native poet sings—

“Sweet Redesdale, thro’ thy winding glens
No more shall hostile tumult roar;

Wi' note forlorn the bugle horn
Shall echo from thy hills no more.

"No more shall ruthless flames devour
The trembling shepherd's lowly shiel;
Nor fierce moss-troopers burst the door,
That strongly bars the shelt'ring peel."

R. ROXBY.

Turning now towards "Otterburn by the highway," the course by the Douglas pillar was taken, although it is said to be displaced from its original site. It is disfigured with the names of holiday seekers. Some one has sown "the mother of thousands," (*Linaria cymbalaria*);

"the crevice flowers
That sprinkle beauty o'er decay,"

in the chinks of the stones at its base.

After a late dinner at the Murray Arms Hotel, the Rev. J. F. Bigge in the chair, Dr Robertson read two papers, one being on the horses' skulls found in the tower of Elsdon Church. This and kindred topics led to an animated discussion and conversation. The Rev. J. Elliot-Bates addressed the meeting on the influence the Phœnicians might be supposed to exert in the introduction of sun-worship, charioteering, and horse-racing into Britain. The Rev. C. Wesson, not being a member, wished, however, to contribute a few observations on horse-sacrifice as practised by the Scythians according to Herodotus. I have since looked up "the father of history," and find that he has recorded also a curious instance of burial of horses that were thrice victorious on the Olympic course, and Ælian refers to another parallel example. Mr Wesson also intended to have spoken of the church of Ippolyts in Hertfordshire, which was dedicated to St. Hippolytus, whose shrine had the virtue of bringing under subjection the temper of those unruly steeds, that were brought to the high altar of this church. "The horses were brought out of the North Street, through the north gate, and the north door of the church, which was boarded on purpose to bring up the horses to the altar."* Mr Thomas Turnbull said that in taking down an old cottage on his property, in Lilliesleaf, the gable of which had formed part of an ancient Peel House (Hector's Peel), the workmen came upon the skull of a horse which had been built into the wall near the centre of the gable. It was found in an upright

* Handbook of Hitchen, pp. 71, 72. From Chauncy's Hist. of Hertfordshire, p. 181.

position, the front projecting a little from the wall. The head had been of a very large size; for though somewhat wasted, the skull still measures $21\frac{1}{2}$ inches. It may be seen with Mr Boyd, Veterinary Surgeon, at Melrose. Some coins of David I., David II., and Edward I., having been found near the foundation, is some proof of the antiquity of the building.

The Rev. J. F. Bigge read from the notes of Mr James Ellis, written on the margin of Hutchinson's History of Northumberland, which copy Mr Bigge possesses, notices of Mote Hills, and on "Robin of Risingham," an effigy cut on sandstone on a hill-side at Parkhead, south-west of Woodburn, to which allusion is made in Sir Walter Scott's "Rokeby." Mr Bigge also made some remarks on the ballad of "Chevy-chase," and alluded to its trumpet tones that thrilled Sir Philip Sidney's chivalrous spirit, and to the approving criticism of the modern version by Addison. Mr James Thomson's specimens of jasper obtained in Ramshope were exhibited. They were accompanied by a paper on the Ramshope jasper. The Redewater Minstrel (R. Roxby), refers to the picking out the jasper, "that shines in the dark, mossy Rede." The colours were good—yellow, red, and a bluish white chalcedony spotted with red, but the stone, although it takes a good polish is much traversed by cracks. Mr Hugh Miller mentioned that he had detected old iron scorix in a variety of situations in the district. The name Snarisdelf indicates one of the iron-mining stations in Elsdon parish. *Delfs* are pits out of which iron has been dug: *Snaris* I take for a local modification of a Norse personal name Snorro, although Mr Hodgson favours another interpretation, suggesting the Danish *snerra*, a battle. The name is old. In Testa de Nevil, Plesencia de Aslakeby, a ward of Roger Bertram, held Snarisdelf by the 20th part of a knight's fee.

There were various plans of camps on the table, as well as beautiful drawings of stone and bronze weapons found in the vicinity, due to the assiduity and skill of Mr Arkle. Mr Arkle exhibited a peculiar Roman half-globular vase or cup of bronze, with ornaments and a round aperture on the sides, and two protuberances, the one opposite the other, below the rim, as if for suspension. He also shewed a fine bronze spear head. Mr Hall of Dunns Houses, handed round a very perfect felstone celt, ploughed up in 1877, at Troughend, on some hitherto unbroken heath land. It had not a scratch upon it. It is of a rather

elongated cuneiform shape, tapering considerably at the narrower end. Its length is $6\frac{1}{2}$ inches; greatest width which is above the cutting edge, $2\frac{3}{4}$ in.; and at the lesser termination it is one inch. Mr Arkle had another of the same pattern and stone, also obtained at Troughend, which was broken by the workers. The fracture was blue, the surface dirty white. One of the inn-keepers at Elsdon had a third of these British stone implements, which appear to be far from scarce in the district. Mr Hall has, since the Elsdon meeting, in November, 1881, obtained a remarkable stone implement from a field next to that in which the two celts were found by his men, and this also was on land that had never previously been cultivated. It is apparently an ancient stone-knife of an oblong or razor-shape, composed of a piece of very fine sandstone, of a dark "sandy drab" colour. The straight cutting edge is sharp and very smooth; the slightly convex rounded back is also smooth; the section of the ends, of which one is not so thick as the other, is elongate ovate. Its length is $4\frac{1}{2}$ inches, and its extreme breadth $1\frac{1}{2}$ inch. It has been suggested that it might have been used as a flaying implement, and a skilful person might really flay a sheep with it yet. When Mr Hodgson wrote, Archdeacon Singleton had in his possession at Elsdon, a collection from the neighbourhood, which is thus enumerated. "1. A flint spear head $3\frac{1}{2}$ inches long, found in the river Rede. 2. A small knife blade of flint, so sharp that Mr Thompson of Otterburn, of whom he procured it, declared that he had mended a pen with it. It is of a very light grey colour. 3. A spear head of flint, about 4 inches long, found on the Camphill near Overacres. 5. An arrow head of flint, found at Shittleheugh near Elishaw, of a very dark colour, and neatly formed."*

Dr. Robertson communicates that "Lady James Murray unfortunately has removed to London a very fine Roman bronze utensil, found near Watling Street some 8 or 9 years ago. It was shewn I believe to the British Museum people, and there was nothing similar there, and also to the Newcastle antiquaries. No one can make out its use. My own idea is that it was made to hold half a salmon—the Romans caught and eat fish; I believe the Celtic inhabitants are stated not to have done so." From the outline figure, this looks like an oblong concave salver, with a loop handle at one end, and a central boss beneath to rest on. It is one foot long.

* Hodgson's Hist. of Northd. Part 2, vol. i. p. 93.

While the account of this meeting is being printed, the occurrence of an additional old stone implement, obtained in the beginning of February, 1882, by Mr John Hedley, having been turned up by the plough on Otterburn Townhead farm, calls for a few remarks. It appears to have been a whet-stone for sharpening a scythe, but instead of being as at present of a hard sandstone, this is of finely granular greywacke, possibly from the Roxburghshire Silurians. The exterior is brown, the interior grey, with minute micaceous specks. The outline is subelliptical, but more sloped at one end than the other; the one side is also more convex than the other. On the most convex side it is much worn from use. The under side is marked by a cross, and it is also worn. The length is 11 inches; the greatest thickness 2 inches; the greatest breadth $3\frac{1}{2}$ inches; near the ends its breadth is about 2 inches to $1\frac{1}{2}$. It is almost of the shape of modern home-made scythe stones.

The thanks of the Club are specially due to William Woodman, Esq., Stobhill, Morpeth, for contributing at his own expense the wood blocks, to illustrate Dr. Robertson's paper on the Horses' heads from the belfry of Elsdon Church.

While most of the members obtained beds in the village or at Elsdon, a considerable number were indebted to the hospitality of the neighbourhood—some going as far as six miles for sleeping accommodation—as well as for the supply of conveyances to take numbers of the company from one place to another, and “to speed the parting guests” by driving them to the nearest stations.

Next day there was still a considerable muster; the Alnwick members, and most of those from across the Borders remained, while their local friends still rendered them aid and direction. In early morning the little wooded ravine on the banks of the Otter, opposite the inn, was examined, and presented several good plants. The following were picked up:—*Campanula latifolia*, *Lysimachia vulgaris*, *Phalaris arundinacea*, *Carex hirta*, *Triticum caninum*, *Geranium sylvaticum*, *Stachys Betonica*, *Sanguisorba officinalis*, *Mercurialis perennis*, *Geum rivale*, *Spiræa Ulmaria*, *Hypericum quadrangulum*, *Crepis succisæfolia*, and *C. paludosa*, *Valeriana officinalis*, and dog-roses red and white. The melancholy plume thistle (*Carduus heterophyllus*) was very prevalent, and it was afterwards noted in the grass fields bordering on the Rede. The burn cuts through sandstone, and although shallow, contains

several trout. The birds in this dean were the white throat; a common wren, which was singing, several of *Sylvia trochilus*, and also the more local wood-wren (*Sylvia sibilatrix*). Otterburn Hall stands higher up the stream.

The great cairn removed in 1729, which drew the particular attention of the Rev. John Horsley, owing to the discovery of an ancient tomb within it, appears to have stood on the haugh between Otterburn village and the Rede. About 60 tons of stones were taken away, when there appeared at the bottom a sort of grave, with a large, but rough, and awkward grave-stone above it, with smaller stones wedged in the interstices. The grave was 2 yards long, 4 feet broad, and as many deep. At the top of the grave was some very fine mould for about $1\frac{1}{2}$ foot, next to it some ashes and cinders, and at the bottom 2 feet of fine white sand from the side of the Rede. Charcoal and pieces of bone burnt black appeared, and a flint of a particular shape, "though nothing artificial about it."* Mr Robert White says the stone was conveyed to Otterburn walk-mill, when the cairn was cleared away, and it still (1882) forms the landing to a stone stair at the east end of the dwelling house. It is of a darkish blue or grey colour, seemingly hard, and only a few inches thick.†

After the company had re-formed, the route was taken for the Roman Camp at High Rochester. By the road-side on the banks of the Rede, the ash trees had suffered much by the severe winter and spring frosts; the ends of the twigs of the spruce firs were bitten, and the furze was nearly killed. Three or four thriving sweet-bay willows (*Salix pentandra*) ornamented a haugh by the side of the river, but they had been planted, as well as the grey willows (*S. cinerea*) alongside of them. Before us following up the Rede were sinuous expanses of boggy meadow, margined or dotted with clumps, or continuous groves of birch and alder, excellent cover for black game, and resorts for woodcocks. But we turned up at Elishaw. Of old there was an ecclesiastical structure here. Here, says Mackenzie's Hist. of Northd. ii. p. 102 "was an hospital and a chapel, valued in the Liber Regis., at 13s. 4d. a year." The first is probably the hospital of the Rede mentioned in the Testa de Nevill. Its master held a hundred solidates of land in pure alms. It was probably a leper hospital.

* Inedited Contrib. to Hist. of Northd. pp. 13, 14; Hutchinson's Hist. of Northd., i., p. 196.

† Table-Book, Leg. Div. i., p. 268.

There was a leper window at Elsdon church. It is very likely that leprosy would be prevalent in Redesdale at some period, as the climate would be much colder, and more unhealthy than it is now, and the means of subsistence scanty. It is well-known that king Robert Bruce notwithstanding his once strong constitution, died of a leprosy brought on by the hardships and exposure which he had endured. On February 10th, 1728-9, the Rev. John Horsley, writes, "I viewed the bridge at Elishaw with Mr Reynold Hall. I believe it to be Watling Sheet, by its elevation and stoniness, that comes from Blackup up to the bridge, the remains of which old Mr Hall (Mr Gabriel Hall of Otterburn) remembers."* The haugh behind Elishaw is the recipient of the floating rubbish that the Rede carries off from the upper country during floods. Hence it is said, when anything is amissing in that district, "you'll find it in the haugh anunder Elishaw." It is also said, "the lang gaunts o' Elishaw were heard in't loans o' Blakelaw," Blackman's Law being a hill near Elishaw, on the opposite side of the Elishaw burn. Almost opposite Elishaw or 'Lishaw is a decayed farm-place, called Rattenraw, near a burn of the same name, about which the people have a saying that "Rattenraw burn will not make a crowd after May-day." This is indicative of the former poverty of the place, the whole of the small stock of winter-corn having been ground up annually before this date. Many places in Redesdale did not grow a sufficiency of grain for the home supply. The map of Elsdon parish places a "Breedless Raw" opposite High Byrness.

I shall not dwell upon what was seen at Bremenium or High Rochester. It has been fully described by the Rev. Dr J. C. Bruce in his 3rd edition of the "Roman Wall," with figures of the inscriptions. Dr. Bruce has also given an account of the excavations at Bremenium, conducted by the late Duke of Northumberland, with several of these figures, in the Newcastle volumes of the Archæological Institute, i. pp. 135, 149. To vary the relation I shall now for a little, make Mr Russell, the reporter. "Bremenium is situated about three miles to the west of Otterburn, and on the way thither good views were obtained of long stretches of the Watling Street, running in a northerly direction towards the Cheviots. The Roman station of Bremenium is situated on the east bank of the water of Rede, near where the Sills burn flows into it, and a little to the west of the Watling Street. It is

* Ined. Cont. Hist. Northd., p. 96.

believed by antiquaries to have been erected chiefly for the protection of this road. The camp was originally a large parallelogram, of which only small portions of the outer wall now remain. This wall had been about 14 feet in height, and is built of large blocks of hewn freestone. Its thickness has been about 17 feet, the inner portion consisting of rubble-work. On one or two of the sides the wall has been strengthened on the exterior by from two to four lines of fosses. The immense fortifications thus erected appear to have served as quarries for the district for hundreds of years, and even when the party was there, a few masons were found engaged in building an additional cottage within the camp, and for this purpose were digging stones out of one corner of the old stone wall.

Under the intelligent guidance of Mr Arkle and Dr. Robertson the members of the Club perambulated the whole boundaries of the camp, noting especially the west gateway, which is still to a certain height apparently as complete as when the Romans vacated the camp."

Major Thompson, Walworth Hall, who is owner of the Peel within the Camp, and who has kindly sent me a sketch of the Roman Gateway just mentioned, gives me also the inscriptions of a silver coin found in the field adjoining the camp. *Obverse* : "The Emperor Trajan Augustus Germanicus (Pontifex Maximus) P.P. (Father of his Country), Consul for the 6th time. *Reverse* : S.P. Q.R. Optimo Principi (The Senate and People of Rome to the best of Princes)." This coin was shewn to the Club at Berwick.

The company next proceeded about half-a-mile across the heathery and grassy hill-side, to the east of the station, to examine the remains of three Roman tombs. At some sandstone rocks more than midway, the pretty lichen *Sphærophoron coralloides* grew in some abundance. The tombs are thus described in Dr. Bruce's Roman Wall, p. 330. "On the line of the Watling Street, and at about half-a-mile S. East of the station are the foundations of some 'cippi' or funeral monuments. They were uncovered by Mr Wm. Coulson, some years ago, and are believed to be the only examples of Roman cippi in England. Three of the tombs are square; the fourth, which is the largest, is circular. The largest one has two courses of stones standing, besides the flat stones which form the foundation; it is ornamented in front with a small carving, resembling the head of a fox; has it been intended for the head of a boar—the emblem of the 20th legion?

On clearing out the interior, a jar of unburnt clay was found, containing calcined bones and a coin of Severus Alexander. The natural soil was found to have been acted upon by fire to the depth of more than a foot. Mixed with the rubbish was a quantity of white ashes.”*

Whatever the animal’s head represented may be, it is not like that of a boar, and Mr Arkle who saw it when it was first exposed thought it was that of a goat. His account of the discovery in a letter to a friend dated from High Carrick, June 18th, 1850, I shall insert here. He says his principal object in writing it is to describe a piece of antiquity discovered, at the distance of half a mile from Bremenium, close on the southern side of the Roman road.

“This is a circular building about seventeen feet in diameter, consisting of a rough layer of stones which forms the foundation, and two courses of ashler work, each about fourteen inches high, and composed of stones from one and a half to two feet long. Each course stands about five inches within the one immediately underneath it, and as the blocks are of considerable width there is no inside facing. On the south side is sculptured, the head of a goat, the workmanship being of an excellent character. This may be supposed to represent the heathen deity Pan who was generally represented under the semblance of that animal. Within were found two large thin oblong stones, the lower edges resting on a quantity of ashes containing some fragments of calcined bones, and the upper edges meeting together, with a small stone placed at each end. The fragments of an urn and some small pieces of glass were also discovered.

Mr Coulson thinks that this work is of Celtic origin, an opinion which appears to be entirely unsupported, except so far as a sun baked urn and the absence of mortar in the building tends to corroborate it.

The Celtic tombs are usually composed of rude blocks, indeed I am not aware that the Britons ever attempted to make any regular erection of hewn stone. Time may have caused the mortar to disappear, and it is easy to conceive how the urn of the Britons might find its way into the work of the more modern people. Certainly the Britons could not be acquainted with the use of glass; there is no mention of its having been made by the Romans before the reign of Tiberius, and from the Emperor Nero having in the year 60 given a sum equivalent to £50,000 for two glass cups, we may conclude that glass would be a scarce article even up to the time when the Romans evacuated Britain.”

Mr Arkle also read notices of two other unopened Long-barrows in that neighbourhood of which the sites were pointed out, and

* I am indebted to Mr J. J. Horsley for these extracts, and also for copies of Dr. Bruce’s figures of objects found at Bremenium, and a drawing of these tombs. Major Thompson has favoured me also with a pen and ink sketch of the tombs.

these in like manner I shall here subjoin for the benefit of future inquirers.

"The first is situated on the grounds of Birdhopecraig, but the best way of reaching it is to drive from Horsley or elsewhere, to a place called Bellshield Burnfoot, and then walk up the hill by way of Bellshield Farm House from which the remains are distant about two miles, close to the south west corner of a plantation, shewn on the Ordnance one inch Map by something like an octagonal figure. On MacLauchlin's Survey of the Watling Street the place is marked 'Remains.'

The barrow is placed on ground shelving a little to the southward, the length being about 112 yards, with a width of 12, and a height of from 2 to 3 yards, the shape having originally been pretty regular. The top is now somewhat uneven, probably from attempts made to reach the interments, which however seem to have been ineffectual. It was noticed that a few stones had recently been disturbed, and on questioning an old shepherd whether he had ever known of a fox being dug out there, he attributed the turning over of the stones to parties in search of rabbits.

On the north side the mound is partially covered with an accumulation of earth and a coating of grass but less so on the south face, which difference may be attributed to the rays of the sun, and the more precipitous edge caused by the declining ground, rather than to any difference of age in the two portions of the structure. Perhaps the stones are larger and more angular than usual, and if so they must be of a harder nature, which has prevented them assuming the rounded and weatherworn shape and appearance so common in such cases. The regular appearance of the barrow forbids the presumption that it originally consisted of a succession of circular cairns placed side by side, another having been added as a fresh interment became necessary, a supposition which might not be extravagant in relation to the other barrow hereinafter noticed. There are no cists exposed to view, neither is there much appearance of any of the stones having been taken away to build the wall of the adjacent plantation.

The other barrow is on the lands of Cottenshope Burnfoot on the eastern side of the burn of the same name and south of Gunsleugh, not far from a sheep fold which is marked on the Ordnance Map, No. XLI. The way to get to this is to leave the Redewater turnpike at a point opposite to the plantation above Burnfoot, following a track till two small rivulets are passed. If I recollect aright, the barrow is situated near to the inner sheep fold, south of Gunsleugh, but am not quite sure of this, as there is another fold further to the north east.

This barrow is 50 yards long, and 25 feet wide, not so regular in its shape as the Birdhopecraig one. Part of it has been removed to build the neighbouring fold, and a cist 4 feet long and two wide remains to view. Both barrows are on the lands of the Earl of Redesdale."

A little incident occurred while viewing the tombs which was rather alarming, a viper having unrolled itself from about the base of one of the tombs, it was held for a time, but was permitted to escape. Vipers also occur on the Otterburn Hills; and

last year Mr Hall's shepherd killed several on the moors above Dunns Houses. Before re-joining the conveyances, a whinchat (*Saxicola rubetra*) was observed perched on the summit of a bog-thistle, the only example seen during the visit. Wheat-ears appeared at Horsley. By the side of Watling Street in proceeding to Dunns Houses, green squares bounded with turf walls were pointed out, which are called "Green camps." The purpose of them is unknown. Curlews, Mr Bolam noticed, were still at High Carrick, but the young and old were assembling for departure; a single curlew was seen between Troughend and Corsenside, and several lapwings above Old Town; wheat-ears also appeared there. At Troughend are some of the largest and oldest elm trees in the district. In the time of Henry III, the Abbot of Gedworth held one carrucate of land in Trocquen in pure alms-gift.* This is unknown to Scottish antiquarians.

We shall now return to the rest of our friends, from whom, bound for Woodburn, we parted at Horsley. "After a few hours," says Mr Russell, "spent in the neighbourhood of the Roman remains, the party returned to Otterburn, about 1 o'clock, where they lunched at the inn, under the chairmanship of Mr Adam Robertson, Mr Wood, Galashiels, being croupier. After lunch the company drank to the healths of Mr Arkle and Dr. Robertson, in recognition of the able and intelligent manner in which during two days they had guided the party in their exploration of the antiquities and curiosities of the neighbourhood. About 3 o'clock the party separated, highly gratified with their two days' sight-seeing in the interesting district of Redesdale."

At this meeting the following were proposed as members of the Club:—Mr William Maddan, British Linen Company's Bank, Berwick; Rev. James Beale, The Parsonage, Dunse; Mr Wm. Thompson Hall of Dunns Houses, by Woodburn; Hugh Miller, F.G.S. of the Ordnance Survey, Elsdon; and Mr James Leslie Newbiggin, Alnwick.

Sir Walter Elliot and Professor Lebour were appointed representatives of the Club at the York meeting of the British Association of Science.

KELSO MEETING.

The fourth meeting was held at Kelso, on Wednesday, August 31st. There were thirty seven or more present, including the two Secretaries, Dr. Francis Douglas and Mr Hardy:—Revs. J. F.

* Testa de Nevill, p. 385.

Bigge, Stamfordham; A. B. Coulson, Carham; William Dobie, Ladykirk; Thomas Ilderton of Ilderton; David Paul, Roxburgh; T. F. Rogers, Precentor of Durham; G. H. Wilkinson of Harperley Park, Darlington; and R. Hopper Williamson, Whickham; Major R. Thompson, Walworth Hall, Darlington; Adjutant Macpherson; Messrs Charles Anderson, Jedburgh; — Battersby, Keswick; James Bogie, Edinburgh; George Bolam, Berwick; John B. Boyd of Cherrytrees; W. B. Boyd of Faldonside; Andrew Brotherston, Kelso; James Cumming, Jedburgh; Charles Douglas, M.D., Woodside; John Ferguson, Dunse; John Freer, Melrose; Edward Johnson of Tweedbank, M.D.; William H. Johnson, Edinburgh; James B. Kerr, Kelso; Jonathan Melrose, Coldstream; Frederick Roy of Nenthorn; Maitland Roy, Liverpool; Francis Russell, Sheriff-Substitute of Roxburghshire; Robert Renton, Fans; Thomas Rutherford, M.B.C.M., Kelso; James Robson Scott of Ashtrees, M.D.; John Thomson, Kelso; Edward Willoby, Berwick; William Wilson, Berwick; and John Henderson Wright, M.B.C.M., Kelso.

After breakfast at the Queen's Head Hotel, the Museum was resorted to, where after a short time spent in viewing the numerous and varied collections, an enchanting view of the banks of the Tweed and Teviot was obtained from the balcony. There are some valuable books of reference in the library. The walk was through Floors grounds, and the environs of the Castle; the flower-garden and the conservatories received special attention. West of the Castle, *Rudbeckia* in plots was seen to be very rich and ornamental. The grass on the lawn, being constantly cut over, is quite free from moss. The woods were then entered, where there were some fine tall beeches, although only of medium dimensions in this direction. The walk led to the banks of the Tweed beneath Broxlaw Hill, where gypsum crops out among the shale. *Listera ovata* was plentiful, as well as *Calamintha Clinopodium*, and several wood-grasses, including *Triticum caninum*. The wild fruits in the woods—crab apples, haws, hips, chestnuts, beech-mast, rowan and elder berries, were most abundant. At the Trow Crag, *Echium vulgare* and *Scabiosa columbaria* were gathered; and a plant of *Thalictrum flexuosum* having been brought to light, Mr Brotherston made some remarks on the differences of forms of *Thalictrum* derived from a diversity of localities. Mr Jeffrey in his Hist. of Roxburghshire, iii. p. 167, will derive *Trows* from *Thor* or *Tor*, a perpendicular rock or height; but if

he had looked into Jamieson's Scottish Dictionary, he would have seen that *Trow* is the same as *Trough*, and there are a plurality of them here where the water rushes among the rocks. Further up were many *Salices*, including *ramulosa*, also *Verbascum Thapsus*, *Galium boreale*, *Carex Watsoni*, *C. muricata*, *Symphytum tuberosum*, etc. Mr Brotherston brought from a shady nook a fine plant of musk mallow (*Malva moschata*) covered with blooms. *Leucodon sciuroides* grew on several of the trees. The Tweed was in full stream, and way was made along the margin of the beautiful reaches, till Makerstoun grounds were reached. In the river it was seen that *Anacharis alsinastrum* had got so far up the Tweed; and Mr Boyd stated that in the Teviot it had reached Ormiston.

At Makerstoun Crags, which are partly of greywacke, the spindle-tree, maiden-pink, black horehound, viper's bugloss, the burnet rose, the great mullein, the stork's bill, and the common feverfew grew; also near it *Juncus compressus*. Below Makerstoun, *Carex muricata* was gathered. On the Corbie Crags beyond the mansion, *Arabis hirsuta*, *Viola hirsuta*, *Helianthemum vulgare*, *Trifolium striatum*, *Avena pratensis*, and *Allium oleraceum* grew, *Asplenium Trichomanes*, and *A. Adiantum nigrum* were gathered, and a few specimens of *Asplenium septentrionale*, which is fortunately in an almost inaccessible position. There is a fine portion of the river above the Crags, wooded on both sides. The Rev. David Paul reminds me that a fine *Polyporus* of which three or four were seen just below Makerstoun House was *Polyporus giganteus*; and another handsome large fungus growing under a beech tree close by, was *Agaricus grammopodius*—both uncommon. Several examples of *Agaricus Georgii* occurred by the walks. There are some magnificent trees in the park to the west of the house, of which Mr Melrose has promised to let the Club have the dimensions. In the entrance hall of the house is preserved an urn derived from a camp situated near the Corbie Crags. There are some old books in the library. A vault below the house is very old, its date about 1400. There is a very fine view from the terrace in front of the house.

The Tweed was crossed by a boat put at the service of the members by Miss Scott Macdougall. Time did not admit of visiting Ringley Hall as was intended. On the return nothing was met by the waysides except *Geranium pratense*. It is said that the Trows thicket is one of the few spots whence the magpies have not yet been extirpated. Several went by Roxburgh

Castle and crossed over, by a boat that Sir George H. S. Douglas had considerably provided, to the gardens and grounds of Springwood Park. The mausoleum and the gardens were visited. Specially among the border flowers were to be noted the blue and scarlet Salvias (*Salvia patens*), some good Phloxes, a species of Statice, and the tiger lilies. In the conservatories the foliage plants and a fine series of Begonias were especially taken notice of. Mr. Wemyss's house was beautifully ornamented with a perennial species of *Tropæolum (speciosum)*, which I see thrives also very well in Lord Reay's garden at Laidlawstiel, and I am told does not prosper so well when transferred to the milder climate of England. The ravages of the frost have been excessively severe at Springwood Park. Almost every evergreen has either been killed or impaired, except the yews bordering the "Green Walk;" and two yew trees have remained intact, which were shorter in the leaf than those cut down. The box and privet hedges were severely damaged. I am informed that a silver fir here nearly destroyed by the *Adelges* or *Chermes Piceæ* was effectually resuscitated by the application of soap and water, which removed the insects. *Campanula latifolia* is planted out in the woods; but many things thus set out fail when the trees grow up. The French willow has also been transferred to the sides of one of the walks. The young shoots used to be eaten as a substitute for Asparagus. There are some noble beeches, as well as other fine shapely timber trees in the parks and grounds.

Arrived at Kelso several of the members visited the Abbey ruins, St. Andrew's Episcopal church, the parish church, &c.

After dinner, the Chairman, Dr. Douglas, gave the toast of the Club, and in doing so, said that that day was also the first of the annual meeting of the British Association, which was nearly as old as the Club. He hoped that the members would drink continued prosperity to the Club and the British Association. Letters of apology for absence were read from the Rev. Thomas Brown, the President, who was detained in the Highlands, and from the Rev. P. Bainbridge, Makerstoun. Mr John Ferguson brought some rare plants from the vicinity of Dunse, including *Limnanthemum Nymphæoides*, *Nuphar luteum*, *Nymphæa alba*, *Acorus calamus*, and *Typha latifolia*, from Dunse Castle lake. These were considered as introductions, but it is interesting to know that they are there. *Acorus calamus* we saw at Foulden. Mr Ferguson also handed in a list of other rarities. Mr James

Cumming, Jedburgh, brought a fine example of *Sirex gigas*, caught in the gas-works at Jedburgh, by Mr James Watson. Mr George Bolam said that he had obtained this large saw fly at Berwick. I have since received a third example taken in a house at Cockburnspath, where the cat was playing with it. Notice of another rare insect,—*Sphinx Convolvuli*—was brought before the meeting by Mr Adam Elliot, Samiestedon, who had received it from Mr Andrew Scott, Glendouglas, who had captured it there on the 20th July. A similar insect, Mr Thomson mentioned, had been found at Hawick, and on the 8th Sept., I received a note from Mr James Simpson, Edinburgh, now of the Anatomical Museum, stating that a fine specimen had been secured three weeks previously at North Berwick. At the Berwick meeting, Miss Dickinson had one also from Norham; and Mr Renton got one at Earlston which was resting on a stone wall. Of one of the other moths, *Acherontia Atropos*, a very fine example was sent me to examine from Haddington. Mr Thomson shewed a section of an old lead pipe connected with the sewage of the Abbey, found in the foundations of the ruin; it had been welded by a hammer; he also exhibited an iron ball found near Roxburgh Castle. A large round pebble of agate, evidently from an amygdaloidal rock, was sent to Mr Boyd from Akeld. The donor thought he had lighted on a “petrified toad.” Mr Renton had a curious horn-spoon, dug out 8 feet deep in Fans moss. It appeared to have been made with a knife. On my way to the meeting I gathered quantities of *Euphorbia exigua* in a gravelly stubble field at Highridge Hall. A visit was paid by some members at the close to Mr Brotherston’s shop, to see the cranium of *Delphinus Tursio*, from a specimen captured off Berwick.

At this meeting the following were proposed as members:—Mr George Bird, 12, Warrender Park, Edinburgh; Rev. A. B. Coulson, Carham; Mr John Dobie, M.A., Ladykirk; Mr James Cumming, banker, Jedburgh; and Mr T. D. Crichton Smith, solicitor, Kelso.

INNERLEITHEN MEETING.

The fifth meeting was held at Innerleithen, on Wednesday, September 28th. Forty-five attended including visitors. Among those present were—Rev. Thomas Brown, F.R.S.E., Edinburgh, President; Dr. Douglas and Mr Hardy, Secretaries; Hon. H. C. Maxwell Stuart of Traquair; Sir Henry Ingilby, Bart., of

Ripley Castle, Yorkshire; Sir Walter Elliot, K.C.S.I., LL.D., of Wolfelee; Sir George H. S. Douglas, Bart., of Springwood Park; Revs. J. F. Bigge, Stamfordham; James Boyd, Innerleithen; C. E. Bowden, Edinburgh; John Henderson, Glasgow; David Paul, Roxburgh; R. F. Proudfoot, Fogo; William Stobbs, Gordon; Drs. H. S. Anderson, Selkirk; Charles Douglas, Kelso; S. Grierson, Melrose; James Hunter, Edinburgh; Tennant, Melrose; Weight, Melrose; Captain Macpherson, Melrose; Captain Norman, R.N., Berwick; Messrs George Anderson, Selkirk; W. L. Blaikie, Holydean; James Bogie, Edinburgh; John B. Boyd of Cherrytrees; W. B. Boyd of Faldonside; Thomas Brewis, Edinburgh; D. Craighead, Galashiels; William Currie, of Linthill; Andrew Currie, Darnick; Master C. Douglas, Edinburgh; James T. S. Elliot, yr. of Wolfelee; A. W. Henderson, Cockburnspath; W. H. Johnson, Edinburgh; Richard Lees, Galashiels; Robert Mathison, Innerleithen; Claude Ponsonby, from The Glen; A. E. Scougal, Melrose; — Scougal, Melrose; Edward Tennent, yr. of The Glen; Thomas Turnbull, Lilliesleaf; Charles Watson, F.S.A., Scot., Dunse; James and David Wood, Galashiels.

Apologies for absence were received from the Marquis of Tweeddale; Professor Balfour, Edinburgh; and Dr. William Chambers of Glenormiston.

Chiefly by means of notes supplied to me, I shall take up the topography at the point left off in the Club's excursion to Ashiesteel in 1878. First of all I follow an itinerary furnished by Miss Russell. "After passing the fishing cottage of the Nest, or Caddonlee Cottage, on the left hand, looking down on the roof of it, the oak called Sir Walter Scott's may be seen in the Ashiesteel haugh, apparently uninjured by the frosts which have taken so many old forest trees, standing comparatively alone and on low ground. The steep plantation along the Tweed to the west of the haugh, the Rumpy Wood, seems to owe its name to a bed of wild garlic, which grows nowhere else in the immediate neighbourhood. The railway passes through the slate rocks near Thornielee [Thornielee Crags]; slates re-appear on the Ashiesteel hill opposite. From near Thornielee the original hill-road of the country went over the hill at Laidlawstiel; the slate cliff being then impassable."

The Thornielee slates with their Graptolites and Annelide-marks

(*Nereites*, *Crossopodia*) are inclined southward.* The slate was once quarried here.

I went up as far as Thornielee station on the day previous to the meeting; and as the rocks about it appeared to look promising for ferns, I asked Mr Robert Mathison, Innerleithen, who gave me the following information. "I have several times walked over this ground and the only rather uncommon ferns I could pick were the *Asplenium Adiantum-nigrum* and the *A. Ruta-muraria*, the latter near Thornielee so abundant, that every joint and fissure of the masonry (in the walls) seemed alive with this little fern. Further down the river there is a fine station for the *Asplenium Trichomanes* growing upon a moist wall and preferring a north aspect."

Opposite the station, Elibank Craig forms part of a craggy and glitter-faced hill that juts out like a great spadeful of mountain thrown in at the base of the higher range behind. On the next hill the old grey tower of Elibank stands a ruin among green pastures or hay fields. The bank beneath it has been originally of hazel, ash, and native wood; but it is now planted with thriving larches; and it is, I believe, intended to form it into an oak coppice. It is marked in Pont's map as "Elybanke wood." Several of the trees near the river were much shattered by last winter's frost.

The burn where Elibank copse ends divides Selkirk and Peebles shires on the south side; the Priesthope burn, in the grounds of Holylee, on the other. The Flora Glen opens next. Holylee house is opposite Elibank. Then Walkerburn, a modern manufacturing village which owes its prosperity to the perseverance of one family, lies at the base of a bare steep concave hill side. Hereabout as we pass onward the hills acquire a more imposing altitude, and have their sides facing the river scooped out from top to base, as if cut sheer away, and become almost perpendicular walls. It is wonderful how green they are with such abrupt slopes, and there is a singular look of cleanliness about them at this season, when the grass is so closely cropped.

"After Walkerburn," to continue Miss Russell's notices, "on the north side, are to be seen a set of irregular and slightly sloping terraces, said to have been made by the laird of the former tower of Purveshill for his seven daughters, who could not walk

* Murchison's *Siluria*, 5th Ed. p. 152., where more may be learned about the Selkirkshire and Peebles-shire Silurian rocks.

together without quarrelling ; but they have certainly never been garden terraces, and from the analogies of other cases, may not unlikely be part of a much older fort.

“ Nearing Innerleithen, the steep-hill to the left or south is the Caddon Bank, on which is one of the oldest plantations in Scotland. There is no doubt that it is such, but it is impossible to say how far it may have been re-planted. The rocky hill on the north side is the Pirn Craig, and the house of the Pirn is passed rather to the west of it. The rocky valley of the Leithen opens actually into the town ; there is a fort on the small planted hill behind the Pirn house, and another on the west side, on a shoulder of the peaked hill called the Lee Pen, still called the Curly Bank, and latterly spelt Caerlee.”

The Lee Pen derives its name from the old castle of Lee situate at the base of the hill. Lee once belonged to Newbattle Abbey.

It is impossible to particularise all the points of interest brought suddenly into view on landing at Innerleithen. I shall content myself with noticing Grieston among the elevated ground of Traquair parish, where the position of an abandoned lead mine, where it perforates a sloping ridge, can be perceived from Innerleithen. Mr Mathison supplies some remarks on the localities for lead in the vicinity. “ Lead is found on the farm of Grieston, in the parish of Traquair. There are here three old mines, in all of which I have been, but they are now filled at the entrance. The ore in this locality used to be found in the burn where I often have gathered it ; but owing to the burn being walled in and covered over it is not now accessible. A second locality is upon the farm of West Bold close by the burn. The ore in this neighbourhood does not appear to be so rich. It is mixed with zinc blende. [Chalmers in his *Caledonia*, ii. p. 901., notices a feeble attempt, made in 1775, to sink a lead mine above the village of Bold]. It has also been found in Innerleithen churchyard, a fact which the following quotation substantiates: ‘ Some years ago the grave-digger frequently came upon the lead ore and portions of the smelting furnaces.’ A porphyry dyke, being the continuation of the same band as at Grieston, crosses the valley near the churchyard.” I was also informed that lead had been observed at Walkerburn. According to Sir Roderick Murchison, “ in the Grieston slates, on the north bank of the anticlinal plunge to the north, and then for the first

time in ascending order we find Trilobites in addition to the Graptolites and Annelides " present in the Thornielee slates.*

Specimens of the galena or lead ore mixed with zinc blende, and also fossil Graptolites from the neighbouring hills, were to be seen in Mr Mathison's garden, which many of the members visited before breakfast. A cross or pillar with sculpturing of Celtic type is here preserved erected on a pedestal, of which Mr Mathison has furnished a drawing. It had been discovered in the old church at Innerleithen when removed. There were here also several querns of porphyry and conglomerate from the district. These querns, Mr Mathison states, "were found when breaking in hill ground at an elevation of about 1000 feet, one upon the farm of West Bold and the other on the farm of Damhead. The under stones are conglomerate and much resemble the breccias or conglomerates of the Firth of Forth near North Berwick. The upper stone is a felspar porphyry from the neighbourhood, very hard and enduring." Mr Mathison at his cottage grows some beautiful flowers, and some rare Peebleshire ferns, including two forms of *Woodsia Ilvensis*.

The excursion was by conveyances furnished from the Traquair Arms, the route being in the first place for Traquair House. Before reaching the entrance attention may be called to a forgotten object, mentioned by Ruickbie, the poet, which should be examined, called "The Fairy Stane." The scene is about a quarter of a mile from Innerleithen. "The stone called the Fairy Stone is yet to be seen at a place called the Chapman Hope, situated at the foot of an opening between two hills, called the Curlaw Swire; it derives its name from one of these hills called the Curlaw rock, and famous in the olden times as the place where the revels of those beings called fairies were annually held."†

In passing to Traquair house, the prominent peaks of the mountain ranges, especially the Lee Pen and Wallace Hill, took the attention. There are the remains of a camp on the north side of the latter, but rather obscure. The grounds of Traquair were entered at the new castellated lodge at the entrance gate on the main road. The house lies to the right, the Quair having to be crossed by a bridge built lately, before the carriage drive to the house is reached. The ford lower down was used latterly, but it is understood that the late Lord Traquair allowed it to go to ruin.

* Siluria, p. 152.

† Transactions of the Hawick Archæological Society, 1864, p. 27.

There was always a foot bridge alongside the ford. The house, either externally or internally, is seldom, or ever, shewn to visitors. But on this present occasion, through the courtesy of the proprietor, the Hon. H. C. Maxwell Stuart, who himself conducted the party through it, the most historic rooms were shown. On account of the frail state of the flooring, from the great age of the house, which is visible both outside and in, but a limited number could be admitted. The first room entered was undergoing repairs. In stripping the paper off the walls an old fresco, ornamented with lions or leopards, among winding branches or foliage, was disclosed, which has scriptural sentences in English along the top and middle of the design. Of this fresco the Earl of Bute lately caused a *facsimile* to be produced. The room contained some ancient relics; among these were spinets on which the ladies of bygone days must have played, and spinning wheels and distaffs which they must have handled. One of the spinets with the date 1718 had been made at Antwerp.* There were also old horse-trappings for state occasions. The old dais, chests, etc., in the room bore marks of great age. The party were shewn a secret stair-case off this room by which the officiating priest could escape from the little chapel in times of persecution. The chapel, which is now a bed-room, was shown, and the position where the altar once stood. The visitors were then conducted to the libraries. One of them contains a large number of rare and valuable manuscripts. The walls of the other are adorned with likenesses of many of the ancient Greek philosophers—Cicero, Demosthenes, Plato, Aristotle, etc. It contains several curious and ancient books. One of these was the Catechism in the vernacular, sanctioned by John Hamilton, archbishop of St. Andrews, and printed at St. Andrews, 29th August, 1552. It is usually called “Archbishop Hamilton’s Catechism,” and consists of about 440 pages, 4to. A large folio Latin Bible, in excellent condition, with coloured initial letters, was printed at Nuremberg in 1497. There was also a miniature Bible in MS., beautifully written, which had also coloured initials. This had belonged to the Abbey of Culross, a monastic establishment founded in 1218, as recorded in “The Book of Melrose.” The inscription on it bore “Liber sancte Marie de Culros in scocia prope Monasterium de Dunfermline.” There was a fine copy of the “Nuremberg

* The inscription on it is, “Soli Deo Gloria. Andreas Ruchesand F. me fecit, Antverpiæ.”

Chronicle," (a history of the world) in German, printed at Nuremberg, 23rd December, 1493, by Anth. Koberger, in folio. The original was in Latin, and was printed by the same printer at the same date and place. This Chronicle was written by Hartman Schedel, and is remarkable for the number and peculiarity and the beauty of its woodcuts, of which there are more than 2000, reckoning those which have been many times repeated. The wood-cuts were by Michael Wolgenmuth (master of Albert Durer) and Wilhelm Pleydenwurffs. According to Brunet "*Manuel du Libraire*," there is another edition of the Latin text, with the same figures, printed at Augsburg by John Schersperger, 1497, in fol. The highest price known to be given for a copy, was 180 francs, but it had the frontispiece painted in gold.

Previous to entering the mansion, some notanda about Traquair house, for which I was obliged to Miss Russell of Ashiesteel, were read, and I shall finish the account of this historical place by giving them here.

"The new entrance from the south, gives a picturesque view of the house. The very wide avenue, the original entrance from the west, is very imposing, and would have been more so, if the trees had been gradually thinned out. It is to be supposed that it was originally a road, but has long been entirely covered with turf. The old iron railing across the front of the house, forming a quadrangle, is very ornamental; I forget exactly what the coat of arms above the gate is; Stuart and the Earldom of Buchan, and some other quarterings. It is always quite bright, as if enamelled, but I suppose it is repainted sometimes.

It will be observed, that the principal part of the house, the great building to the east, is in two parts, the roofs being of quite different slope. The northern part is believed to be very old, and indeed I quite believe it to be, as is said, one of the oldest inhabited houses in Scotland. I have heard it said that the lowest story of this oldest part might quite probably be part of a house inhabited in the time of Robert Bruce; but I do not know that there were any particular reasons for this date being assigned, and if it is as old as that, it is quite as likely to be older; for it was in the two hundred years between the Norman Conquest and the Wars of Independence, that the more or less Celtic kings of Scotland made Traquair a regular royal residence; while the necessity of building towers or houses of some strength would be found before this time. Indeed it was only with Robert Bruce that the peculiar and successful system of leaving the country undefended, in a general invasion, originated. The later kings, whose capital was as near as Edinburgh, did not require any special establishment to enable them to hunt in this country.

On the southern part of the main building, which projects a little in front, has not such a steep roof as the other, and is not so entirely without windows in the lower part, is the date 1642, showing it must have been built by the

first Earl of Traquair, who was Treasurer of Scotland in the time of Charles the First.

The small porch, which rather looks as it were an addition, and probably is such, protects a fine iron-studded door, with a graceful ornamental knocker. It is perhaps the oddest of all the anecdotes about Sir Walter Scott, that, as the housekeeper was accustomed to relate, he used to regret that he could not get this knocker for Abbotsford, because, as he said, Montrose's hand had been on it. There is no doubt Montrose was at Traquair after the battle of Philiphaugh, but the date on the knocker, in letters four inches long, is 1705, just sixty years later. It shows what an overpowering faculty Sir Walter's imagination was, for he is quite reliable as to facts where there was nothing to stimulate it. A very similar circumstance is mentioned in the Statistical Account of Yarrow. Whether the moor called Annan's Treat (really no doubt Annan Street, the Annandale road) was a burial ground or a battle field, it was formerly scattered over with some 25 or 30 cairns, among which stood two upright stones. When the cairns were destroyed, while Sir Walter was living in the parish, at Ashiesteel, he began to connect the stones which were left, with the authentic duel of the 'Dowie Dens of Yarrow,' in which two gentlemen of the name of Scott, brothers-in-law, I think, killed each other; and this though it was on record that the duel had been fought at Dewchar, some two miles lower down the valley.

It is almost certain Montrose must have been at Traquair before, as he and Lord Traquair had married sisters; but it should be observed that the Minchmoor road by which he and his immediate followers came off from Philiphaugh, was the high-road of the country, the direct line from Edinburgh to Selkirk and Hawick. It was used for marching the infantry regiments of the Edinburgh garrison by, when they were changed, at least till the time of railways.

The two one-story wings of Traquair house, are without date, but some of the outbuildings have the date 1745, and these seem to be of the same period. That on the south side was latterly inhabited by the late Lady Louisa Stuart, and indeed her brother Lord Traquair, or, as she called him to the last, 'Linton'—his title when his father was alive—lived chiefly in these rooms too. The north wing I think is the stables belonging to the house. On this side there is rather a picturesque pond, with old trees about it. I heard a story lately that this was the old bed of the Tweed, of which the course had been turned; no doubt this is true, geologically, for there is nothing but haughland between; but not probably since Traquair house was built. The pond seems to be a piece of ornamental water of the last century. The masonry terraces on the east of the house are curious, for till the father of the late Lord Traquair made the two flights of steps, there was no access to the house this way; in fact they were a means of being in the open air in a fortified place.—Some of the old gean trees (*Prunus avium*) have been cut down which, netted with enormous nets and with a man sitting up all night to watch them, used to be a particular hobby of the late Lord Traquair. They bore very large crops of the native black fruit. [Charles, 8th Earl of Traquair, died in 1861].

Before leaving Traquair, it may be remarked, that Lady Louisa Stuart, who up to her hundredth year, was keenly interested in all that went on in the

neighbourhood, had no tendency to go back to the past; the only case in which any one can remember her mentioning anything connected with her earlier life, was when she reminded a neighbour who had just been in Spain, of the name of a particular street in Madrid, where the Traquair family had been before the Peninsular War, when France was closed by the Revolution. This showed there was no failing of memory. [Lady Louisa died 6th Dec., 1875, in her hundredth year]. Family traditions were probably rather suppressed. The Lord Traquair of the day was in prison as a Jacobite all through the Balmerino and Kilmarnock trials, but nothing could be proved against him.

It is strange Sir Walter Scott has not mentioned Traquair with its armorial bears among his originals of Tully-Veolan."

Dr. Alexander Geddes, a native of Banffshire, was chaplain in the family of the 6th Earl here, a man of remarkable scholarly accomplishments. He published two vols. of a translation of the Bible in 1792 and 1797. In 1781 he paid a visit to Charles, the 7th Earl, at Traquair house, and there wrote a poem entitled "Linton: a Tweeddale Pastoral." Dr. Geddes is the author of the popular song, "The Wee Wifiekie," and the fine Jacobite lyric "Lewie Gordon."*

After leaving, the principal gateway to Traquair house was first passed. The coat of arms with the bear supporters, is very conspicuous. The avenue from the gate to the front of the house is lined with tall trees. The story is that it has not been used since 1796, on account of the funeral cortege of the Countess of Charles the seventh Earl having passed through it, he having signified a wish that it should not be used again. This earl died 14th Oct., 1827.

Resuming the journey, the hamlet of Traquair was soon reached. When the kings of Scotland, with their numerous retinue, sojourned for deer-hunting in its vicinity, it must have been a considerable village. At one period Traquair was a sheriffdom. One of the ministers of the parish, the Rev. James Nicol, born at Innerleithen, has some fame as a poet. He was ordained 4th Nov., 1802, and died 5th Nov., 1819. He published "Poems, chiefly in the Scottish Dialect," 2 vols. Edinburgh, 1805, 12mo; contributed a number of articles to the "Edinburgh Encyclopædia," and wrote "An Essay on the Nature and Design of Scripture Sacrifices," published posthumously in 1823. His eldest son, who died recently, was the well-known geologist, Professor James Nicol, Professor of Natural History in the University of Aberdeen.

* Professor Veitch's *Hist. and Poetry of the Scottish Border*, pp. 475-6.

Proceeding onwards an interesting spot is neared. The Quair water is seen running on the right, at some distance from the road. Above it, on the face of the hill, "The Bush aboon Traquair," celebrated in Crawford's song, with its singularly plaintive (Principal Shairp says "blythe!") air, once grew. It stood near the base of the hill called the Birks, and fell down early in the century, although it still survives in books. "The Bush aboon Traquair," like "The Broom o' Cowdenknowes," "The Birks of Aberfeldy," and "The Birks of Invermay," Allan Cunningham remarks, "continue to supply the curious with snuff-boxes and drinking-cups," although there is not a stick left of the majority of them.

Orchard-mains, a farm once the property of the Earls of Southesk, was passed, and then after a drive of two miles up the circuitous valley of the Quair, the woods enclosing the fine modern baronial mansion of The Glen, the seat of Charles Tennant, Esq., M.P., are reached. It is not without surprise that one finds a palatial residence, surrounded with so many natural attractions of wood and water and variegated hill-slopes, to which taste and art have added the final touches, within the sight of the brown heath on the mountain's shaggy brow, and not remote from barren acclivities, where vegetation struggles for existence.

The more recent part of the mansion at The Glen was erected by Bryce in 1855; and in 1873 large additions were made. The gardens and grounds are in keeping with the house. The lawns and terraces are kept in the very best of order, the former being trimmed almost as smooth as velvet. The place was remarked on in its modern beauty as a marked contrast to Traquair, the representative of departed greatness. The extensive green-houses, kitchen-gardens, vineries, pine-stoves, fig and peach, and tomato houses, shrubberies and flower gardens were passed under minute review. The most notable plants in the conservatories are the tree ferns *Cibotium Schiedei* and *C. princeps*; the Crotons, *Bougainvillea glabra* trained over an arch, and *Clerodendron* on a globe; *Ixora coccinea* an old fashioned shrub; and the old *Erica elegans*. In the Orchid-house the more remarkable were *Vanda tricolor*, *V. teres*, *Peristera elata* and *Anthurium Scherzerianum*. For the most part Glen, which stands almost 900 feet above the sea, has escaped the ravages of the recent severe winters; but several of the Araucarias were singed, and the yews, and especially the laurestinuses and Portugal Laurels bore many tokens of

damage. The rhododendrons were thriving. They are planted in peat and not in the natural soil. It is renewed as they get larger.

A small party passed up the ravine above the grounds towards the hills, and obtained a few fungi, on which the Rev. David Paul makes the following observations.

"No fungi of any interest were observed about Traquair, the only ones picked up being such common species as *Agaricus laccatus*, *Lactarius blennius*, and *Scleroderma vulgare*. As the gates of The Glen were approached, fine specimens of *Hygrophorus puniceus* were seen on the hill side to the right, and all over the lawns near the house was abundance of *Hygrophorus virgineus*. Though the ground looked favourable there was no variety of the large fungi, nor was any one of them in itself interesting. Here and there about the shrubberies and walks were found the ubiquitous *Agaricus fascicularis*; *Ag. terreus*, and *imbricatus*; *Ag. melleus*; *Ag. mutabilis*; *Ag. squarrosus*, the pretty *Ag. granulatus*; *Boletus chrysenteron*; very large specimens of *Clavaria rugosa*, growing beside fine specimens of the fetid *Phallus impudicus*, both full grown and in the egg.

One specimen of *Gomphidius glutinosus* was found on our return to Innerleithen in the fir wood behind the well."

By invitation the company partook of lunch, and Lady Ribblesdale did the honours of the house. Mr Edward Tennant then shewed his collection of the birds of Peeblesshire, which were well preserved specimens. They comprised:—the rough-legged buzzard, two; peregrine falcon, two; common buzzard, two; merlin, two; kestrel; sparrow-hawk, three; tawny or brown owl; long-eared owl; chough or red-legged crow; cross-bill, two; ring-ouzel, two; magpie; bull-finch, two; common wren; crested wren; meadow pipit; long-tailed, blue and coal tits; tree-creeper; pewit; golden plover; curlew; woodcock; snipe; black game and grouse; partridge; coot; land-rail; water-rail; cock pheasant, in variegated plumage; common sand-piper; green sand-piper; little grebe or dabchick; herring gull; golden eyed duck, in immature plumage; teal. The Red-legged Chough was shot by a ploughman somewhere in the vicinity. Mr Robert Grey thus writes me, "The occurrence of the chough in Peeblesshire is of very great interest. In my 'Birds of the West of Scotland,' I refer to the disappearance of this bird from inland places where it formerly occurred in considerable numbers; but this specimen at The Glen, is the second instance that has come under my notice this year of the chough returning to its inland quarters—the other being in Ayrshire." Mr Mathison enumerates among the rare birds of Peeblesshire the peregrine falcon;

the buzzard; the raven; and the king-fisher. "The osprey made a short visit this spring to St. Mary's Loch and Loch Skene, where formerly it used to build on a rocky island which rises a few feet above the waters of this desolate and lonely mountain tarn."

We passed and re-passed near the entrance to the grounds, the spot where Lucy, whose story has been so pathetically sung by Sir Walter Scott's friend, William Laidlaw, "wonned i' the glen a' the simmer." Adjacent to it, as we were told, although scarcely crediting it at the instant, lived once Captain Porteous, whom the Edinburgh mob murdered—Sept. 7, 1736—in an outburst of national fury. But I am informed that by the older generation in this locality he is said to have been born at old or Easter Glen. In support of the statement the following evidence is from the Statistical Account of Peeblesshire, 1845.

"Tradition affirms that Captain Porteous was born in Easter Glen in this Parish." "Porteous when a lad was like other boys of his own age addicted to mischief and practical joking. One day he unluckily happened to kill a hen which belonged to an old woman who resided in one of the cottages adjacent to his father's. On seeing her favourite deprived of life, the wrath of the grandam was kindled. She vowed the most horrible vengeance, and among other things which she is reported to have uttered, she declared that there would be more people present at his death than there were feathers on her hen."

On returning to Innerleithen the company went to see the well, now called St. Ronan's, from Sir Walter Scott's novel of that name, but originally the "Doo Well," the pigeons having resorted to drink of the waters of what was little better than a puddle, until it acquired celebrity. It is much less resorted to now than formerly.

There was no time to spare to visit the British camp at Caerlee, although had we known the ground better it might have been arranged to overtake it also. On the camps of Peeblesshire I had a letter from Dr. William Chambers of Glenormiston, which I have great pleasure in quoting. Dr. Chambers after saying that he would be glad to give to the Club any special information in his power, proceeds to mention what he had done in his "History of Peeblesshire," in which there is a tolerably complete list of British camps in the county, including that at Caerlee, half of which is within his property. "I took great pains," he continues, "to analyse the character of these camps, and came to the conclusion that for the most part they originated as defensible

posts against the invasion of Jutes and Angles subsequent to the departure of the Romans. The Club would be interested in comparing these circular camps of a rude type, with the square and still well defined camp at Lyne, a few miles west of Peebles. This is a very precious relic of antiquity, which I am happy to say, by my recommendation, has been saved by the present Earl of Wemyss, the proprietor of the land, from progressive ruin. My History contains a sketch as it was originally, and when I visited it a few years since." In conclusion I give a few thoughts of Mr Robert Mathison, to whom the Club owes so much for his guidance and information throughout the excursion, on these pre-historic remains. He says "there is a camp on Chester hill on the south side of the Tweed immediately opposite the Caerlee camp. The latter is in a good state of preservation, the ditch and mound being nearly entire throughout the whole circumference of the ring. Peeblesshire abounds with camps. You rarely find them on the higher hills, mostly on the lower or at a moderate height, averaging from five hundred to one thousand feet above the level of the valley, and not far from the river or its tributaries." Mr M. then refers to the cairns as part of the camp system, rudely constructed as they are of "stones gathered into heaps on the hill-sides or by the burns, and not very far from the site of the camps. How strange they look! old and hoary, and grim with the magnificence of age; and beautifully crusted and stained by the growth of lichens. The question naturally arises, what are they, or for what purpose were those stones piled up? Well, I think, they have been the place of sepulture of the rude inhabitants of the camps. If so, what a step down from the towering pyramids and polished stone sarcophagus of ancient Egypt, to the rudely constructed cairn and uncoffined ashes of the early Briton."

After dinner Sir Walter Elliot gave an account of what had occurred at the York meeting of the British Association of Science, so far as the representative interests of the Club are involved. Sir Walter will furnish a separate report on the conclusions the delegates of clubs such as ours had arrived at. Sir Walter had obtained a large two-handed quern from near Wolfelee, but it was too heavy to transport to the meeting. It is double the bulk of the ordinary sized querns, and has the hole for the handle at the side instead of the top for inserting the handle to turn it.

A letter was read from the Rev. George Marjoribanks, Stenton,

accompanying another from William Allan Woddrop, Esq., of Garvald House, Dolphinton, in reference to a brass pot, of the three-legged "kail-pot" type, discovered on Mr Woddrop's property of Edmonston, in Biggar parish, last summer. It was found only about four inches below the surface; about a quarter of a mile from the old Roman Camp on Candy Castle. The pot when found was on its feet and full of earth. It had an iron handle, very much rusted. The pot was exhibited before the meeting dispersed. Such brass pots are found in inventories of a few generations back. It is a very perfect specimen; has a circular projecting ridge below the insertion of the ears; two parallel ridges round the middle; and a fourth single one above the insertion of the feet, the feet are its chief peculiarity, as they raise it up considerably, and are stiff looking. There is a double lance-like ridge lengthways on the centre of each, and the termination is like the foot of an ox. The height is $11\frac{3}{4}$ inches. It is cast in two pieces. The length of the feet is $4\frac{1}{2}$ inches. Mr Mathison has sent a fine drawing of it, along with these dimensions. When exhibited since at Edinburgh to the members of the Society of Scottish Antiquaries, its chief interest to them was the iron handle, which none of their examples were provided with. As appears by their Catalogue the neighbourhood of Biggar has been very productive of these brass pots.

Mr Blaikie, Holydean, exhibited a map of the course of the Niger, drawn by Mungo Park, the traveller, previous to undertaking his last fatal journey; also a letter of Mungo Park, to his sister; and two letters of Sir Walter Scott, the longest being addressed to Mrs Laidlaw, Peel. A Report on the Effects of Winter 1880-81, on Vegetation and Animals at Mounteviot, by Mr Page, gardener to the Marquis of Lothian, was received. Mr James Wood, Galashiels, showed a ponderous iron axe of antique fashion that had been found recently near Hume Castle.

The following gentlemen were proposed as members at this meeting:—Mr Ephraim Arkle, Carrick, Elsdon, Northumberland; Dr. Tennant, Melrose; Dr. Weight, Melrose; Dr. John Henderson Wright, Kelso; Rev. James Boyd, Innerleithen; Mr Richard Lees, Galashiels; Mr Edward Tennant, yr. of The Glen; Stevenson Macadam, Ph.D., Lecturer on Chemistry, Surgeon's Hall, Edinburgh; and the Hon. H. C. Maxwell-Stuart of Traquair.

BERWICK MEETING.

The annual meeting was held at Berwick, on Wednesday, 12th October, at half-past twelve, in the King's Arms Hotel. There were present:—Rev. Thomas Brown, F.R.S.E., President; Dr. Douglas and Mr Hardy, Secretaries; Sir Walter Elliot of Wolflee, K.C.S.I., F.R.S. etc.; Revs. W. Dobie, M.A., Ladykirk; Robert Paul, M.A., Dollar; R. F. Proudfoot, B.A., Fogo; R. Hopper Williamson, M.A., Whickham; Robert Wilson, Rigmuir, Hamilton; Professor Balfour, M.D., F.R.S., Edinburgh; Major Thompson, Walworth Hall, Darlington; Capt. Forbes, R.N., Berwick; Capt. Norman, R.N.; Dr. Fluker, Dr. Richardson, and Dr. Paxton, Berwick; Messrs R. G. Bolam, Berwick; George Bolam, Berwick; W. B. Boyd of Faldonside; A. Brotherton, Kelso; William Cunningham, Coldstream; Robert Douglas, Berwick; John Ferguson, Dunse; Peter Loney, Marchmont; William Maddan, Berwick; James Purves, Berwick; John Sadler, Curator of the Royal Botanic Gardens, Edinburgh; William Shaw, Eyemouth; John Thomson, Kelso; Robert Weddell, Berwick; William Wilson, Berwick; and Matthew Young, Berwick.

The retiring President, Rev. Thomas Brown, occupied the chair, and delivered a most touching closing address. Professor Balfour proposed a vote of thanks to the president for his able address—one of the best addresses he had ever listened to—a vote which was heartily accorded. In returning thanks, Mr Brown nominated as his successor the Rev. James Farquharson, M.A., Selkirk, as president for the next year.

Mr Hardy read an outline of the proceedings at the various meetings of the Club in 1881. Dr. Douglas said that so many places had been visited by the Club that they were compelled to go further afield. He proposed that the meetings for next year be: May, Haddington; June, Hownam for Chew Green; July, Longformacus; August, Corbridge-on-Tyne; September, Jedburgh; while out of compliment to the new president, he proposed the business meeting to be held at Selkirk.

The noblemen and gentlemen who had been proposed as members at the meetings during the season were then admitted members of the Club, the list being added to by the nomination of Mr Adam Darling, mayor of Berwick; Mr A. L. Miller, Berwick; Dr. Thomas Frazer, Berwick; and Dr. Heagerty, Tweedmouth.

Sir Walter Elliot among other remarks on the working of the Club said that many members were not aware of their responsibilities as members of the Club, and did not recognise the full scope of the Club's work. A committee had sketched a plan to explain the objects for which the Club was instituted, which Sir Walter stated would be printed and circulated among the members. It was then proposed to indicate to the Club subjects for general inquiry; and meteorology, biology, geology, archæology, parochial history, and biography, were suggested.

Mr Bolam, who had audited the accounts in the absence of Mr Middlemas, gave a statement of the monetary position of the Club. The income had been £104 2s., while the expenditure amounted to £108 7s. 9d. This left a balance due to the treasurer, but arrears amounting to £30 were to come in. It was then agreed that all members should pay 6d per annum additional to the present subscription, to cover the rather large cost of the postage of the Club's "Proceedings." Sir Walter Elliot proposed Mrs Middlemas, Alnwick, as an honorary member of the Club, in recognition of her disinterested services on its behalf. This was at once, and cordially agreed to.

Major Thompson exhibited a silver coin of Hadrian, which was found at the Roman Camp of Rochester; and the Rev Robert Paul, Dollar, showed a number of flint arrow heads and wrought flints found on Tent's Muir, in Fifeshire. Our Lady members at Berwick had much to shew of objects interesting to the Club. Mr Brotherston stated that a specimen of the Gemmeous Dragonet (*Callionymus Lyra*) had been recently found among other fishes at Berwick. Dr Johnston states that this remarkable and beautiful fish is not uncommon on our coast. Mr John Ferguson had remarked that in the Dunse district, Black-caps and Redstarts were this year very numerous. In some visits to the upper part of Westruther parish, he had gathered the French willow (*Epilobium angustifolium*) in some of the ravines, as I have done in another similar cleugh close on the hills above Woodhall, E.L.; he had also found *Vaccinium Vitis-Idæa* on the Lammermoors of that parish, and *Vaccinium Oxycoccus*, or cranberry in some of the mosses.

Mr Renton had found *Utricularia minor* in fine flower in Gordon moss, which is very rare in that condition.

The members dined in the King's Arms Hotel at 3 o'clock.

OBITUARY NOTICES.

We have sustained the loss of seven members during the past year—1. Major John Hutcheson Fergusson-Home of Bassendean. Major Home, born at Edinburgh in 1815, was the eldest son of Mr James Fergusson of Crosshall, Ayrshire, principal Clerk of the Court of Session, by Mary, daughter of John Home of Bassendean, a cadet of the ancient house of Home. Entering at an early age the Bengal Army, he rose to the post of Major of the 33rd Regiment, B.N.I. He went through much hard service, was present at the battles of Moodkee, Ferozeshah, Aliwal, and Sobraon, under General Sir Henry Hardinge in 1842, for which he received a medal and clasps. Under General Pollock in 1845-6 he was engaged in the relief of Jellalabad, and took part in forcing the Kyber Pass. He succeeded to Bassendean on the death of his uncle, Lieut.-Gen. John Home Home, Col. of the 56th Regiment, and for some time Lieut.-Governor and Commander-in-Chief of Nova Scotia. He resided chiefly at Bassendean, or The Mount, Coldingham. For several years he commanded a corps of Berwickshire volunteers, and was a J.P. and deputy lieutenant of the county. He was held in much respect as a landlord and neighbour. His death took place at Edinburgh, May 27th, 1881. He became a member of the Club, Sept. 29th, 1875. 2. Cospatrick Alexander, eleventh Earl of Home, died at the Hirsell, July 4th, 1881, in his 82nd year. His death was sudden and unseen, in the woods whither he had gone to meet the forester, not more than fifty yards from the appointed place of meeting. The noble Earl was born at Dalkeith House, Oct. 27th, 1799. He succeeded his father in 1841. During his career he held several important offices of State. Under the Ministry of the Duke of Wellington from 1828 till 1830 he was Under-Secretary of State for Foreign Affairs; and in 1852 he was Keeper of the Great Seal of Scotland. He was a representative peer for Scotland from 1842 till 1874, and then was created a British peer under the title of Baron Douglas, the extensive possessions of the Douglas family, having through his Countess come to his House. He was a deputy lieutenant in Berwickshire and Lanarkshire. The Earl of Home "took great pride in the management of his estate, personally devising and superintending the carrying out of the work for improving the amenity and increasing the beauty of his policies and gardens. He had his woods always kept in superior order. He was well versed in the

principles and practice of agriculture, horticulture and forestry; and the habits of punctuality and method acquired in the public service in early life, made him orderly and exact in the transactions of business all through his long career. He was an excellent and considerate landlord, and evinced a kindly interest in the concerns of his dependents, those especially who had been overtaken by illness or adversity being the objects of his open-handed but unostentatious generosity." His Lordship became a member of the Club, Oct. 20th, 1847, and ranked 13th in the order of seniority of membership. An earlier interest, however, had been manifested by him in the objects of the Club, as in 1835 it is recorded that there was read "A notice of the Fishes found in the Tweed, and in the rivulets and lochs in the vicinity of the Hirsell, by the Earl of Home." (Proc. i. p. 67). This appears to have been partly utilised in Dr. Johnston's "List of the Fishes of Berwickshire," in the same vol. p. 172. In vol. v. p. 442 we have another communication signifying that for three nights, 7th, 8th, and 9th November a swallow passed the night in the library at Hirsell. Lord Home also supplied information to Mr Yarrel for his "British Fishes." Under his Lordship's sanction, the family papers of the House of Home, have long been under preparation by Mr William Fraser, as a privately printed work. 3. Rev. John Hunter Walker, minister of Greenlaw, died there in June 26th, 1881, in the 81st year of his age, and 48th of his ministry. Mr Walker was previously minister of Legerwood, where he was ordained, Oct. 4th, 1836. He was translated to Greenlaw, Aug. 2nd, 1844. He was an able and earnest preacher, and was much esteemed and respected by his parishioners. He was able to discharge his pastoral and pulpit duties to the last. Mr Walker was fond of archæology, and had a fund of local information about the topography and traditions of Berwickshire, and the history of the ancient families of the district, which he was always happy to impart to a ready listener, to whom his suavity of manner was charming. He had conversed with many old people of intelligence and observation, and he thus came to know much that the older generation had certain opinions upon, and the grounds on which these rested. He had also read extensively, and recollected all he had read. Geology had engaged some of his spare time, as appears from a few notices he has left. He was the writer of the account of the parish of Legerwood in the New Stat. Account of Berwickshire, pp. 347-360. He became a member of the

Club, Sept. 22nd, 1858. He contributed to the Club's Proc. vol. v. pp. 110-120, an "Account of the Town and Parish of Greenlaw," which contains some facts not readily to be met with, without some research. 4. Dr. Robert Wilson, Alnwick, died Nov. 19th, 1881. Dr. Wilson was the son of the late Mr Allan Wilson, Inverneil, Argyleshire. Intended for the medical profession he prosecuted his studies at the University of Glasgow, where after a distinguished curriculum he took the degree of Doctor of Medicine in 1848. After spending two years as house surgeon to the Northern Infirmary, Inverness, he came into England, and settling at Castle Eden, county Durham, he quickly laid the foundation of a large and responsible practice. His courteous demeanour and kindly sympathy made him the friend and favourite of all classes, but by none were his services more warmly appreciated than by the humbler orders. In 1863 he read before the British Association, at Newcastle, an able and interesting paper on the "Habits and diseases of the miners of Northumberland and Durham," which excited much attention in medicoliterary circles. Resigning his practice in Castle Eden to his brother, Dr. Allan Wilson, he came to Alnwick in 1864 as successor to the late Dr. George Wilson. His genial disposition and scientific skill readily won him the esteem and confidence of the leading county families, whose medical adviser and friend he continued to be till his death. In recognition of his high professional abilities his colleagues recently elected him president of the British Medical Association at the next meeting of which he would have presided. Dr. Wilson became a member of the Club, September 29th, 1865. He was intimately associated with the volunteer movement in the advancement of which he took a personal interest. His remains were interred in Alnwick Cemetery with military honours. 5. Mr William Kinnear, who became a member, Sept. 29th, 1865, died at Radcliffe House, Acklington, December 6th, 1881, aged 31 years. 6. Mr Andrew Scott, Glendouglas, factor to the Earl of Home, died suddenly, Jan. 13th, 1882. Mr Scott, who was much respected, became a member, Sept. 26th, 1871. 7. Rev. Adam Spence, minister of the Free Church, Houndwood, died Jan. 23rd, 1882. On returning home, Jan. 20th, from his pastoral duties on horseback, Mr Spence met a sad and tragic accident, by his horse taking fright and throwing him violently to the ground. He was picked up and conveyed to Coveyheugh House, where he died of his injuries, never having

regained consciousness. Mr Spence was born at Frenchlaw near Whitsome, where his father occupied a small farm, and he was in a great measure self-educated. He was pastor over Houndwood Free Church for thirty-six years. It was chiefly through his instrumentality that a new Free Church was erected at Reston. He was the author of a very beautiful tribute to the memory of the late George Buchan of Kelloe in the "Disruption Worthies." Mr Spence's Christian excellence, his earnest but unobtrusive and untiring efforts among his people, and his missionary zeal, joined to a gentle and persuasive manner, made him a general favourite. His death will make a general blank in the locality where he was so much esteemed. He had a fund of curious information, the result of his early experience, about the people of a bypast age, with which he used to enliven his lectures for popular instruction. He expressed very great satisfaction at becoming a member of the Berwickshire Naturalist's Club, when he was proposed at Reston in May, 1879.

Notes on the Effects of the recent Winter Storms on Birds and other Animals—November, 1880, to March, 1881.

By ROBERT GRAY, F.R.S.E., F.S.A. Scot.

[Read 25th May, 1881, at the Dunbar Meeting of the Club].

It is not many weeks since we escaped from the rigours of a winter which may safely be said to have been one of the severest on record during the present century, and I have thought that it might interest the members of the Club, to listen for a few minutes to some of the observations which have been made in various parts of the country, on the effects of the season upon Birds and other animals. These observations, I may remark, are taken from my own note books, and from letters addressed to myself by correspondents throughout Scotland, during the storms which broke out at intervals between November and the last week of March.

Before giving an abstract of the occurrences of which I have taken note, it may not be out of place to refer to the strong easterly gales which prevailed in the end of October, and up to the middle of the following month, and which may be said to have been the beginning of sorrow to the poor birds. Many of the Clyde Ships on their passage from America, were thronged with flocks of birds of various species, and I have several records before me which shew that these visitors in Mid Atlantic were more than usually numerous during the months I have mentioned. One ship in particular—the “Rutland” of Greenock—was on the 25th of October, literally covered with small birds when between four and five hundred miles from the coast of Ireland. The vessel had been tossed about in the Atlantic for 72 days, and the crew on board had run short of provisions. The visitation of birds, therefore, was looked upon as a Providential relief. The chief species were the common thrush, pied wagtail, linnet, and snipe. There was only one robin in the vast assemblage. The birds covered the deck and rigging, and Captain Roy has informed me through my friend Mr Stark, that many of them died almost immediately, through apparent exhaustion. The “Rutland” left Quebec on the 28th August and experienced easterly winds all the way across. The first flock of birds alighted on the 20th September, and as the distance of the ship from Newfoundland was at that time not over 400 miles, it is presumed that many of the little creatures, which, after leaving the vessel, were seen to be carried on with the gale, found their way to that country.

Although several heavy falls of snow had taken place in December, it was not until the first week of January that the effects of the weather began to be shewn. Later in the month, viz., about the 20th, sea-gulls, which in all my lengthened experience I have never seen put to straits, succumbed to the frost. Intelligence reached me that these birds were dying in hundreds on the banks of the Mersey near Liverpool, owing to the frozen state of the mud banks from which their food had been largely derived, and on further enquiry I found the information to be only too true. About the same time it was discovered that on the banks of Loch Lomond, wild ducks, grebes, coots, and other waterfowls were dying in considerable numbers, and that hundreds of rabbits were frozen to death all along the shores of the Loch. Fish, ranging from 10 to 20lbs. in weight, were also observed to have been killed in a similar manner in the river Leven which runs out of the Loch.

After the storm had continued without a break for about three weeks, it became evident even to the most careless observer that birds had to a great extent disappeared from districts where its effects had been most felt, and that to such as had remained the season had proved to be one of unparalleled severity. General sympathy, however, became awakened in their favour, and in many places a clearance of the snow was made and food placed within their reach. Odd assemblages of species were then seen : rooks, pigeons, partridges, bramblings, snow buntings, gallinules, and sea-gulls, all joining in the half starved crowd. I often wondered what had become of the more familiar species—larks, blackbirds, thrushes, and such birds as are always to be found in the neighbourhood of towns, villages, and farm yards, and I had even ventured to suggest in my note books that they had succumbed to the frost. But I afterwards found that I had come to a wrong conclusion, and it was with no small satisfaction that I learned from several correspondents, that in the more sheltered districts, where the snow fall had been but trifling, small birds of all kinds were not only plentiful, but that a very large increase in their numbers had been observed—records which show that the birds had gathered into flocks and wandered about in search of both food and shelter, or in other words, that local migrations had taken place. Thus in some parts of Argyleshire, notably in the Kyles of Bute, large flocks of larks, pied wagtails, meadow pipits, blackbirds, and thrushes, suddenly made their appearance

about the middle of February. On the sheltered slopes of the hills above Tighnabruaich, the number of birds was quite remarkable, and this invasion occurred when the storm in other parts of Scotland was regarded as the worst of the season up to that date. In other places, as for instance in the immediate neighbourhood of Glasgow, the flocks of larks especially might well be called immense. In one case a field of five acres on which but a sprinkling of snow had fallen, was seen to be literally covered with these birds—the surface of the ground being completely hidden. Some one curious in figures made the calculation that one or even two hundred thousand larks were far within the actual numbers in the field.

About the same time there appeared in the neighbourhood of Edinburgh, very large flights of larks and snow buntings. These flocks were noticed in some instances close to the city, the buntings especially, having attracted considerable attention through the strikingly variegated appearance of their plumage while in flight.

During a thaw, more or less complete, which occurred about the close of January, proofs were not wanting, as the snow melted, of the frost's terrible severity. In the Botanic Gardens at Edinburgh the dead bodies of many birds were found—blackbirds, thrushes, redwings, and chaffinches. The greatest mortality, however, occurred among wood pigeons and rooks. Numbers were found dead, and others were observed to be so sickly and emaciated, as to be quite unable to save themselves from the clutches of the cats which infest the enclosures.

In the island of Raasay, cartloads of dead rabbits were found after the snow had disappeared,—a mortality which must have occurred in many other places besides, although no actual records have reached me.

One of the most singular results of the extraordinary and persistent frost which had been experienced in the month of January, was the destruction of littoral shell fish on different parts of the coast. Enormous quantities of *Solen Siliqua* and *Macra stultorum* were thrown upon the beach near Stornoway in the outer Hebrides, and also at Nairn on the shores of the Moray Firth. The same thing occurred near the mouth of the Tay, on the Forfarshire side, the species that suffered most in the locality being the common mussel (*Mytilus edulis*). There can be no doubt that in the three instances I have given, these molluscs—millions of which

were carted away—had been destroyed by the intense frost when the tide was out. A similar occurrence took place in the neighbourhood of Leith and Portobello, during the hard winter of 1855, and a paper on the subject by the late Hugh Miller appeared in the Proceedings of the Royal Physical Society (vol. i. p. 10). In this paper the author remarks that the “wholesale destruction of these species by a frost a few degrees more intense than is common in our climate, strikingly shews how simply by slight changes of climate induced by physical causes, whole races of animals may become extinct.”

As a consequence of this destruction of animals living in shallow water along our shores, I may here allude to the occurrence in a comparative state of emaciation, of various birds which are known to feed upon them. Mergansers, grebes, black-throated and red-throated divers, &c., were all seen to be keeping close in shore, and were found to be in bad condition. I examined an unusual number of red-necked grebes killed in Mid-Lothian and Haddingtonshire. Some of these had left the coast and gone inland, only, however, to meet with a worse fate. Herons, too, principally old birds, were obtained in quite unusual numbers in an enfeebled state.

On the 10th February a fresh storm broke out, and was found to be worse than any that had preceded it, the words “terrific” and “tremendous” being applied to it in the weather telegrams. From some parts of Perthshire I learned that blackbirds and other small birds were seen falling dead from the trees, and that in districts where the previous thaw had not been complete, the renewal of the storm was likely to kill every living thing not under shelter. Fortunately, however, its severity was of comparatively short duration, and before a week was over the ground in lowland parts at least, was again opened, and the winged fauna seemed to have been relieved of their sufferings for the time being, and of all prospect indeed of further danger.

My own notes and correspondence at this time shew that many species which had disappeared from certain localities had again come back, and that some had commenced their spring notes—the missel thrush especially being in full song. This continued with occasional breaks which induced renewed quiet, and in some cases despondency, until the 4th of March, when the worst storm of this memorable winter occurred. The snowdrift was in fact quite unprecedented, and the traffic of nearly all the Scottish

Railways was more or less interrupted. In the northern counties, indeed, trains were completely buried, and many cattle perished in the trucks. Any one who read the newspapers of the day must remember the hardships endured by travellers in these trains, the disastrous shipwrecks that occurred a day or two afterwards, and the tremendous floods which followed the melting of the snow. In short the incidents connected with this particular storm will not soon be forgotten.

In connection with this subject I may, without going into further details, summarize the effects of a winter which has probably no parallel in the experience of any one now hearing me :—

(I). It caused most of the smaller birds to gather into flocks and flit restlessly from place to place in search of food and shelter, and this partial migration no doubt was the means of preventing their destruction.

(II). It produced an unusual number of cases of partial and complete albinism. I do not remember a season in which so many such instances have come under my observation.

(III). Numerous and wide spread instances of death by frost and starvation occurred, but the results from this point of view are comparatively insignificant when compared with the destruction caused by birds having been blown out to sea. Hundreds of thousands must have been lost in this way.

(IV). Birds of Prey, as a rule, were quite uninjured—their well-known powers of flight, and the comparatively easy capture of half-starved birds having saved them at least from starvation. Wild quadrupeds on the other hand—the Carnivora especially—were sorely beset by the storms.

(V). Hares and rabbits were driven to commit extraordinary havoc among the trees, even of considerable dimensions, the bark having been entirely gnawed off for a space of 18 inches, and in some cases to a depth of 4-10ths of an inch. I examined many large trees of 30 years growth in Perthshire, which had been in this way totally ruined. In Lanarkshire, rabbits were observed climbing on the branches of trees three or four feet from the ground, and devouring the bark. The proprietor of an estate near Lesmahagow informs me that he estimates the damage done by rabbits to his woods at many hundreds of pounds.

(VI). Alpine hares deserted their usual haunts, and descended to the low grounds in search of food. Many were observed traversing the streets and villages in Perthshire.

Lastly. Before the final storm which occurred in March, lapwings, curlews, and other birds, had left the sea shore and retired to their inland breeding places. They were therefore overwhelmed by the quantity of snow that fell, and instead of going back to the coast, as they certainly ought to have done, they cast aside their usual wariness and approached farms and country residences where they could find a clearance or moist spot on which they could rest. In connection with this it ought to be remembered that in some parts of the country snow lay to a depth of twelve and fourteen feet, and that even in villages of some size, people were literally dug out of their dwellings.

I must apologise for having taken up so much of the time of the meeting on this occasion, but perhaps I may venture to hope that these notes have been of some slight interest. Let us hope as a body of Naturalists, that no such winter will occur again in our day.

And now when it is gone :

“Happy the ear which first perceives,
From depths of freshly blowing leaves,
The sparrow’s cry along the eaves.

“The rook’s alarm—the swallow’s cry,
The magpies’ jangled litany,
The curlew’s challenge, shrill and high.”

It has been our privilege to-day, to be welcomed by choristers whose winter existence has never been so imperilled, and although it has been chronicled that many a peaceful glen is but half peopled when compared with former years, I know that we have cause to rejoice that so many of our feathered favourites have been spared.

On the Birds found in the neighbourhood of Pressmenan Lake, East Lothian. By ARCHIBALD HEPBURN, Esq.,
Ramsbottom, Manchester.

THE birds which 30 years ago frequented, or were occasionally found in the neighbourhood of Pressmenan Lake, amounted to above 70 or 80 species. The Sparrow Hawk was the only permanent resident belonging to the diurnal rapacious birds; the Merlin, Kestrel, and Buzzard, migrated before winter. There

was a decided increase in their numbers for 2 or 3 weeks about the autumnal equinox. The Short-Eared Owl was a winter visitor. The Long-Eared, Tawny, and Barn Owls, were permanently resident; the Grey Flycatcher a rare summer resident. Of the Thrush family, the Dipper or Watercrow frequented all the streams. The Missel Thrush and Blackbird were common and permanent residents, also the Song Thrush for nine months in the year, mid-winter being spent on the sandhills by the sea shore. The Redwing and Fieldfare were abundant in winter and spring. The Ring Ouzel frequented the mountain ash when its berries were ripe. Of the Sylviidæ or slender billed warblers, the Redbreast and Hedgechanter were plentiful; of the summer visitors of this family, the Redstart or Firetail was very rare. The Blackcap and Garden Warblers not uncommon. The White-throat, very common. The Wood Wren, not uncommon where Beech trees were numerous. Strange to say, I never heard or saw the Sedge Warbler by the lake, or in its immediate neighbourhood. The Willow Wren very common. The Gold-crested Wren common. Of the Wagtail family, the Pied Wagtail, and the Grey and Yellow Wagtail, visited the Lake, but chiefly haunted the neighbouring streams. The latter was permanently resident; the former departed in September, and returned again in March. The Meadow Pipit was common, except during the breeding season. The Tree Pipit was not rare, so also was the Wheatear, or Stonechat as it was called; the Whinchat very rare, all three being only summer residents. The 4 common species of the Tit family were common (I never met with the Marsh Tit). Of the hard-billed birds which feed their young on insects, and chiefly subsist on seeds and grass, the Skylark was abundant, except during mid-winter, when it migrated to the sea coast. The Common or Corn Bunting was a rare straggler from other localities in the county. The Reed Bunting, rare and local, departed in the autumn or early winter. The Brambling, or Cock of the North, was rather a rare winter visitor. The Yellow Bunting, Chaffinch, Sparrow, Green Linnet, and Grey Linnet, were abundant. The Bullfinch not rare. Of the Crow family, the Starling, a recent colonist was rapidly becoming common; the Common Crow and Grey Crow were not common; the Rook abundant; the Jackdaw not rare; the Magpie rare. The Tree Creeper not uncommon. The Wren common. The Cuckoo not uncommon. Of the Swallow family, the Swift

was a daily summer visitor ; the Sand Martin was rather common but local ; the Swallow was common ; the House Martin decreasing in numbers almost every year. The Night Jar, or Goatsucker, very rare. The Ring Dove or Cushat too abundant. The Pheasant common. The Partridge very common. The Golden Plover, small flocks in winter and spring occasionally. The Lapwing, or Pewit, common, and resident from February to November. The Heron a daily visitor to the streams ; sometimes seen by the lake. The Curlew seldom alights in the fields. The Common Sandpiper, a common summer resident by the streams and occasionally seen by the lake. The Common and Jack Snipe, winter visitors in hard weather, not common. The Woodcock not very rare in Pressmenan Wood at times during winter and spring. Corn Crake, not uncommon in the fields in summer and early autumn. Gallinule not uncommon in lake and streams. The Bean and the Pinkfooted Goose, almost daily visitors to a few fields eastward of the lake during spring. The Mallard seldom seen by lake or streams, oftener seen and heard on the wing passing to and from the sea by day and in autumn evenings. The Common Pochard and Golden Eye are occasionally seen on the lake in winter and early spring. The Little Grebe rarely seen on the lake. The Common and the Herring Gull, the latter in immature plumage, and the Blackheaded Gull occasionally frequent the fields except during the height of summer.

After this rough enumeration it may not be out of place to add a few remarks on some of the Birds. I once found the nest of a partridge containing some pheasant's eggs along with her own. On mentioning the incident to an intelligent gamekeeper, he told me that he had frequently met with the like, both in England and Scotland, and that the partridge made the best foster mother. Game preserving was the apology offered for the virulence with which the hawks, owls, crows, and magpies, were persecuted ; and extermination was the object aimed at by gamekeepers who tried to do their duty to their employers. The balance of nature was destroyed, and the wood pigeon was rapidly becoming an intolerable nuisance by the extent of its damage to crops of grain, turnips, and clover. I have seen in districts where flesh and egg-eating birds were not persecuted and where game-preserving was not encouraged, that the egg-eating birds kept the wood pigeon within very moderate bounds. I have seen the carrion crow watching the domestic ducks when laying and dropping

their eggs about the margin of pools in spring; also carrying off downy ducklings in their claws to their nests, and once I saw two old crows successfully throttling a duckling fit for the spit, whilst their newly fledged brood clamoured around. I have also seen these birds wading in shallow water and picking up the large *Unio* molluscs in rivers where these abounded, the banks in many places being strewn with broken shells.

In districts where the magpie is not persecuted, their nests may be seen conspicuously placed on trees, near cottages, farm yards, and even on the outskirts of villages and towns, and it earns an honest livelihood. It is not a very uncommon thing to see five or six pairs of magpies sitting on one tree, in a bright spring day, and those who admire this beautiful bird—and who does not,—can well imagine what a beautiful sight it is. How many thousands of acres in East Lothian or Berwickshire would require to be requisitioned to supply a dozen magpies to such a parliament? I have seen rooks carrying off eggs, and their presence on the tillage farm is not an unmixed evil, but it is quite a mistake to suppose that the rooks cannot live on lowland districts where dairy farming on old grass land prevails, almost to the exclusion of tillage. The well manured meadows and pasture land supply plenty of food, except during snow storms. Their nests may not only be seen in twos and threes in hedgerow trees, but also in numbers varying from a dozen to a hundred or more in small groves. They not only cling to their nesting stations, when houses and factories spring up alongside, but now and then they will found a flourishing colony in a grove close to factories where the whir of machinery never ceases by day or by night except at meal hours, from 6 a.m. on Monday, till 1 p.m. on Saturday. The starling also makes himself quite as much at home in such scenes, as he does about the cottage or barn or hollow trees. This bird is one of the farmers' best friends.

On the Skeletons exhumed at Elsdon, and their probable connection with the Battle of Otterburn. By Dr. EDWARD C. ROBERTSON, Otterburn.

IN the course of the restoration of St. Cuthbert's Church at Elsdon in the year 1877, it was found necessary to dig down and alter very considerably the levels of the different parts of the

flooring of the church. Such was the accumulation of soil within the building, that the bases of the pillars were nearly covered and out of sight. The flooring was damp, and a disagreeable musty odour pervaded the church. In reducing the levels to their present state, it was necessary to remove in the Nave some 4 feet in depth of soil, and in the Transepts and Chancel about 2½ feet. In the Nave the soil was removed completely with all remains contained in it down to the subsoil; in the other parts of the church, about one half of the soil was left. The removing of the earth brought to view an immense collection of skeletons, in every quarter of the edifice. The labourers who removed the earth, kept count of the number of skulls they carted into the pits dug in the churchyard to receive the bones, and they reported that 996 whole skulls were re-interred, besides a large number mutilated in the course of the removal. I may fairly estimate that the remains of nearly 1200 of the former chief inhabitants of the district were thus disturbed and removed from their silent beds, whilst probably 300 or 400 are left still peacefully reposing in hallowed ground. The skeletons bore every indication of having been much disturbed by the interment of those more recently buried. No doubt the intra-mural interments had taken place during hundreds of years, the last having occurred some 80 years ago and thus the bones of the earlier deceased had been frequently put out of place to make room for their successors. We thus frequently found skulls lying together in heaps of 3 and 4 in one spot. No remains other than bones were found, with the exception of a very few modern coffin handles, with a little decayed wood, and in one instance a small quantity of flaxen hair. The only sign of warfare and deadly strife I observed upon the bones so brought to light was upon one skull found in Hedley's Porch, which had during life been cleft open, but the hardy Borderer had recovered from the deadly wound, and very probably had lived for many years after its infliction. I picked up several bones of evident antiquity, which showed that their unfortunate possessors had been severe sufferers from rheumatic diseases, the hip joints being distorted and the leg bones immensely enlarged by ossific deposit. Some of the thigh bones in the Chancel were of great length and straightness. I estimated that their owners must have been from 6ft. 4in. to 6ft. 6in. in height. Whilst examining the excavations within the church, I was astonished to find that the north wall of the Nave was very shallow in its

foundation, shallower than the south Nave and Transepts' walls, and that the north Nave wall was built over and upon skeletons. These bodies were lying E. and W., and were completely under the wall of the church. I dug very carefully and with difficulty under the foundation of this north wall, and found the skeletons so laid, that the head of one was lying between the knees of its fellow. I examined under the deeper foundations of the corresponding south Nave wall, and also under those of the Transepts and Chancel, but under none of them did I discover any bones. In Hodgson's History of Nothumberland, in describing Elsdon Church, the Historian of the 7 parishes writes, "In removing a great accumulation of earth, against the north wall of the church, some short time before our visit here, in Sept., 1810, the bones of 100 or more (we have since been told only about 30) persons were discovered in double rows, with the skulls of one row within the thigh bones of the other, packed, as the labourers said, in the smallest possible compass." These skeletons mentioned by Hodgson had been discovered outside the church exactly opposite the wall, under which I traced bodies buried in exactly the same manner. Within the Nave it was impossible to determine how the bodies had been buried, but on examination of the bodies, I came to the conviction, that they were mainly the remains of men, and chiefly of young and middle aged men. From the close packing of the skeletons, I think it may be inferred that these dead men had been buried at *one* time and in all probability were the remains of men slain in battle. From the facts I have just brought before the Club, viz., that the foundations of that one wall, under which human skeletons were found, were shallower than the other foundations of the church, it seems to me fair to infer—I. That the bodies so found were buried before the Nave was built, II. That the bodies had only shortly before the erection of the wall been consigned to the earth; and that it was to avoid the disturbance of these closely packed and not yet decomposed bodies, that the foundations of the church were in that part *not* so deeply laid, as in the rest of the church.

If I am correct in my inferences, and we can by its architecture discover when the church was built, we shall have a clue as to when these bones lived, moved, and had their being. Hodgson judges from its architecture that the church belongs to the period immediately after Richard II., or very early in the fifteenth century, Richard being deposed in 1399. Mr Wilson the well-known

ecclesiastical architect and author of "Churches of Lindisfarne," to whose enlightened taste we owe the conservative restoration of this fine old parish church, also assigns the erection of this edifice to about the same period. No doubt a much older and probably smaller church had existed at Elsdon for many centuries—small remains of it are to be found in the west part of the church in the round Norman pilasters, and in the small round-headed windows, but the edifice as it at present stands, dates back undoubtedly to about the year 1400. Now in the autumn, "About the Lammase tyde, when husbonds wynn ther hays" of the year 1388, there was fought 3 miles distant from Elsdon, the famous Battle of Otterburn, where there was slain a large number of knights and men of high degree. The great Scottish leader fell in the combat, and his dead body was with those of Sir Robert Hart and Sir Simon Glendinning carried away long 40 miles to Melrose for burial. No historian tells us what became of the corpses of men nearly equally distinguished, who fell in the fray, but the ballad in a touching stanza tells us.

"Then one the morne they made them beeres,
Of byrch and haysell graye;
Many a widowe with wepyng teyres,
Ther makes they fette awaye."

The probability seems strong, that the bodies of the glorious dead, lying on their rustic biers, were carried to the parish church for interment with all solemn rites, in the consecrated ground, whilst the bodies of the meaner soldiers found a grave where they fell. There is no account extant of any battle about that period, except the battle of Otterburn, having occurred near Elsdon, which could have produced so many bodies "in one red burial blent," as those mentioned by Hodgson as discovered outside the church at Elsdon and to which must be added the skeletons I found extending under the walls, and probably within the Nave of the old Border church. We thus find ourselves arriving at the conclusion, that the mouldering bones I have been dilating upon are the remains of those warriors true, who in the autumn of 1388 met in deadly warfare on the now peaceful slopes of Otterburn, and whose heroic deeds are handed down to all generations in that chiefest of ballads—which will live as long as the English language endures—"The Battle of Otterburne."

On a discovery of Horse-heads in the Belfry of Elsdon Church, Northumberland. By Dr. EDWARD C. ROBERTSON, Otterburn.

IN 1877 it was found necessary to pull down the small spire, which terminated the bell-turret, that surmounts the western gable of St. Cuthbert's Church, Elsdon. In the spire, immediately over the bell was discovered a small chamber, without any opening, and in it, nearly filling the cavity, were three horse-heads or rather skulls, piled against each other in a triangular form, the jaws being uppermost. The heads look to be two of draught horses, and one of a cob.

Measurement of horse skulls, found in spire of Elsdon Church.

	Length over the top.	Breadth from one eye-socket to the other.	Circumference of head over centre of eyeholes.
I.	24½ inches.	7½ inches.	23 inches.
II.	24¼ inches.	7¼ inches.	22 inches.
III.	20½ inches.	6¾ inches.	20½ inches.

Much speculation arose as to the meaning of horses' heads being placed in such a position. By some it was looked upon as a mason's freak; by others that the cavity had been formed to act like a hollow sounding-board, to assist by its vibrations the feeble sounds of the single bell in the tower. Neither of these views is a sufficient explanation of the strange placing of horse-heads in a chamber evidently formed to receive them, in the highest part of an edifice devoted to God's worship. I venture to express the view, that the reason of the placing the heads of horses on high, and fixing them in the tower, is to be found in some old Pagan custom, derived even as our language, and indeed we ourselves, originally from the far East.

Many Pagan customs still obtain amongst us, and many have only lately died out. In all countries superstitions die hard. A negro in the West Indies, who all his life has prayed and sung psalms with the Methodists, is after death often found to have round his neck some talisman, obtained from the Obi Man. The fires at Midsummer, through which cattle were driven to protect them from disease, were burning only a few years ago on Elsdon green—their origin in the worship of Baal being forgotten; Well-worship continues to this day, and votive gifts, not so valuable

as those showered into Coventina's well, are still thrown into the clear spring waters. We have in All-Saints' Day the Heathen autumn festival—in All-Hallow-Eve the day of thanksgiving for the fruits of the earth, when apples are eaten, and stalks of corn pulled for charms. The Midwinter festival of the Pagan Yule—is changed into the feast Christmas and kept as the birth of our Saviour. In Easter we have the Saxon Goddess of Spring, in proper person "Eostre"; and throughout the Eastern Church, as well as in the West we have the eggs still, which were offered to the goddess "Eostre" as a symbol of production, or as the Roman Catholic Church says, of the resurrection. Paul II., in 1466 issued a form of benediction of eggs for England "for those eating them in thankfulness on account of the resurrection of our Lord." The "Yirding of a live cock" to cure epilepsy, which custom has perhaps hardly even yet passed away, is another example—it being in the nineteenth century an unwitting offering to the heathen god, Esculapius. The last words of Socrates may be quoted, as referring to the custom of offering a cock to the god of health, "Crito, I owe a cock to Asclepias, will you remember to pay the debt." "The debt shall be paid" said Crito, "is there anything else." There was no answer, Socrates was dead.

We need not feel surprise at such superstitious practices being connected with Christianity. The early missionaries did not stamp out such things, but gave them a religious turn. Well-worship continued, but the wells became consecrated to the Saints—the Heathen feasts became Christian festivals, the sacred ivy and holly of the Heathen were used by the priests of the new religion to adorn their churches. This shows how great was the tolerance of the early Christian church towards the rites and ceremonies of Heathen worship.

These ancient pre-Christian rites might be expected to keep their hold upon the people most tenaciously in a district, situated as the dale of the Rede, of which Elsdon might be called the capital, was of old. Redesdale was until quite recently, a very secluded valley, surrounded by moors and morasses, and occupied to a great extent by shaggy woods. Until all-conquering Rome planted her standard in its centre, Redesdale must have been singularly inaccessible to the outer world. After the Roman domination came to an end, the district seems to have remained undisturbed by Saxon from the east or Northman from the west.

In his sylvan fastnesses the Celtic inhabitant held his own, nay, for many generations did much more, harrying and robbing his more peaceful neighbours. Redesdale being a Regality, with a resident Lord of the Manor supreme, for centuries it was found that "The King's writ runneth not in Redesdale." Until the time of Bernard Gilpin, the thieves, that is the men of Redesdale, were probably hardly Christians even by profession. Their clergy and instructors are described by Bishop Fox in 1498 as "wholly ignorant of letters, the priest of ten years standing not knowing how to read the ritual." In this community of men, ignorant, dissolute, accustomed to crime, debarred by laws made specially against them from mixing freely with their neighbours, having only slight connection with the world beyond their own morass-girt vale, and intermarrying amongst themselves, it may be expected that old customs and superstitions lingered longer amongst these fierce Borderers, than elsewhere. The Redesdale man of the fourteenth century probably still showed in his habits and customs many affinities to his early Aryan progenitor, who in one of the Keltish migrations left the east of the Caspian, and fought his way across the north of Greece and central States of Europe to North Germany and Britain.

In early times human sacrifice was common and was of course the most solemn of all. Next in honour came the sacrifice of the horse. "In the earliest period (writes Grimm) the horse seems to have been the favourite animal for sacrifice. Our ancestors have this in common with several Slavic and Finnish races, with Persians and Indians; with all of them the horse passed for a specially sacred animal. Heathendom saw something sacred and divine in the horse and often endowed him with consciousness and sympathy in the destiny of man." We have an example of this in the *Iliad*, where Achilles has a touching conversation with Xanthos and Bullios—a parallel case is in the Karling legend of Bayard, and several others in the Northern Sagas might be quoted. The admiration of the Ancients for the horse was supreme. In "Job," that oldest drama, the horse is described in language of marvellous poetic beauty. "His neck clothed in thunder—he swalloweth the ground with fierceness and rage—he smelleth the battle afar off." Paris rushing forth with Hector to battle, like a God, is likened by Homer, [Pope's translation] to

"The wanton courser, thus with reins unbound,
Breaks from his stall and beats the trembling ground;
Pamper'd and proud he seeks the wonted tides,
And waves, in height of blood, his shining sides.
His head now freed, he tosses to the skies,
His mane, dishevell'd on his shoulders flies;
He snuffs the females on the distant plain,
And springs exulting to his fields again."

This is a picture of strength, power, activity, and beauty, and the horse, the noble symbol of these natural qualities, was in the far East taken as the pre-eminent sacrifice or offering. In India the great rite of horse-sacrifice—the Assamhedha, long since disappeared from Indian life—is the most impressive ceremony of sacrifice, of which we have any account. This great solemnity is thus defined in Dowson's Hindoo Mythology, "Rajah-Surya—a Royal Sacrifice, a sacrifice performed at the installation of a king. It implied that he was a *supreme* lord, or King over Kings." It seems to have been performed three thousand years ago—at any rate in the great Indian poem "Ramayana," written several centuries before our era, the great horse-sacrifice with all its intricate ceremonies is portrayed. Let me quote a description of it from "Wheelboy's History." "When Yudhishthira was firmly established in the kingdom, he resolved to celebrate the great sacrifice, known as the Aswamhedha or sacrifice of a horse. It was an assertion of the Rajah's supremacy over the whole world. A horse of a particular colour was let loose a year to wander at its will. At the end of the year it was brought back triumphantly to his own city, when the animal was sacrificed and there was a grand feast, at which the roasted flesh of the horse would be eaten as an imperial dish." Another interesting account of the same sacrificial ceremony is given in "William's Indian Wisdom." "The horse for sacrifice was allowed to roam about for a year. If no one was able to seize it during that period, it was deemed fit for sacrifice, but the seizure was sometimes effected by the god Indra. Another year was consumed in preparations for the sacrifice." Again, "Dasaratha not having a son, resolved to perform the horse sacrifice and so propitiate the gods to give him one." The following is a curious description of the ceremony. "Twenty one Yupas or sacrificial posts were erected, to which were tied various animals and the horse. Near the horse the Queens of Dasaratha watched for a whole night. The marrow of the horse was taken out and

dressed and the carcase was then cut up and offered in the fire, and the King smelling the smoke of the burning flesh, became absolved from his sins. One important part of the proceedings was the feasting and largesses. King Dasaratha is described as giving to the priests a hundred million pieces of gold and four times as many of silver." The horse chosen was either white like the moon, with saffron tail and black right ear, or black as midnight, without one speck on it of any other colour. "It is difficult," writes Arnold, "to raise the thoughts of a modern western public to the solemnity, majesty, and marvel of the antique, oriental rite of the Aswamedha, as viewed by the Hindoos."

Our kinsmen the Germans, in the days of the Romans, still preserved some of the old veneration of their Eastern forefathers for the horse. Tacitus, the great Roman historian, writes of their worship: "The Germans consecrated groves. Gods dwelt there—no images are mentioned by name, as being set up—no temple walls were reared, but sacred vessels and altars stand in the forest, and heads of animals hang on the boughs of trees." In another place we read of "*immolati diis equi abscissum caput*," or the severed head of a horse sacrificed to the gods. Again Tacitus mentions "the Alemanni, who eat horse-flesh, *cutting off the head*, which was not consumed with the rest, but consecrated by way of eminence to the gods." When Cæcina on approaching the scene of Varus's overthrow by the German tribes, saw horse-heads fastened to the stems of trees, these were no other than the Roman horses, which the Germans had offered up to their gods. The Hermanduri are also described by Tacitus as sacrificing the horses of the defeated Catti.

Among the Northmen it was customary to fix a horse-head upon the "*Neidstange*," which gave the power to bewitch an enemy. In German children-stories are still to be found surviving but now hardly understood reminiscences of the mysterious meaning of a horse's head suspended. In Russian fairy-tales also horse-heads figure as possessed of mystic faculties and powers. Gregory the Great, the Supreme Pontiff between 1073 and 1085 admonishes Brunichild to take precaution with her Franks, "*ut de animalium capitibus sacrificia, sacrilega non exhibeant*," that is, that they do not commit sacrilege by the sacrifice of the heads of animals. This shows that the practice must have remained so common, even in the eleventh century in the Christian Church, as to require a set condemnation from its Pope.

At the present time the horse-head has in eastern countries not lost all its superstitious power. Tozer in 1879 writes, that the skulls of horses may, in Asia Minor, be seen stuck up on poles in the fields to avert the evil eye.

"In olden times," writes Marryatt, "there was a strange custom in Zealand (Denmark), and may be elsewhere, of interring a living horse in every church-yard, before any human being could be buried there. This horse re-appears under the name of the Hell-horse . . . ill luck to the man who sees it, for it foretells his own death." An entire skeleton of a horse was found in 1842 in the Saxon cemetery of Marston, St. Lawrence, Northampton. We here find the horse taking the place of the human sacrifice, which was common in early times, to insure the success of buildings, the human offering being built into the wall alive.

Beyond being a type of strength, beauty and activity, the horse seems in early times, and in the East to have been considered an emblem of the Sun, that greatest and most beneficent visible being in the universe and in itself a natural object of worship to man. The Psalmist speaks of the sun as a "bridegroom coming out of his chamber and rejoicing as a strong man to run his race." Call the sun a Racer (and he is so named in several mythologies) and it brings at once before us the idea of the horse. In fact the horse is constantly associated in mythology with the sun. Phaeton and the horses of the sun are an example. In the minds of Vedic worshippers, the sun is associated with fire and is frequently represented sitting in a chariot, drawn by seven ruddy horses—the seven days of the week. It is also to be seen represented as borne on horseback. The sun in the heavens was in heathen mythology itself a symbol of the resurrection—setting at night, rising in the morning. The horse in time became from its resemblance to the sun, a type or symbol of the resurrection. The sun moved rapidly, so did the horse. The idea of the sun as a being drawn in a chariot by horses was soon reached. Thus we have Indra, the Sun-God, drawn by the Harits. One more step; the horses of the sun in the Veda are Arushi, and the Sun is also Arushi, the terms thus being interchangeable. In two chapters of Revelations the horse is significant of victory, and he that sat on the white horse had for name "King of Kings and Lord of Lords."

In ancient Etruscan tombs, we find on the funeral urns the horse portrayed, waiting to take its dead master off to a new world, and in one case a horse's head is represented as looking in through a window, upon a funeral feast.

In ancient British tombs the skeleton of the horse has been frequently found buried beside human remains. At the period when these burials took place, the flesh of the horse was esteemed a favourite article of food, and the occurrence of these remains of the horse near or alongside those of the dead warrior, seems to indicate rather the funeral feast than the attachment of the deceased master to his faithful steed. But sometimes the head alone of the horse has been found in the grave—a fact open to many constructions. One instance is very noteworthy: in 1849 alongside a stone coffin found near Bath, was dug up the head of a horse enclosed in a stone box. In Japan many symbols were introduced with Buddhism; amongst them the cross-like symbol of the sun, the Swastica, is put on coffins, with a drawing on white wood of the Yama, or sacrificial horse. This drawing has been formally deposited in the tomb of every person of importance, ever since the abandonment in the first century of our era, of the ancient custom of sacrificing the horse. (*Edinburgh Review*). It is remarkable that this horse is delineated, not as the little ill-formed animals of the country, but with all the beauty of the Arab horse.

The horse is represented on numerous early British coins. By many antiquaries, these coins are considered as medals, used in the worship of Mithras the sun-god, and not as pieces of money. I have given woodcuts of three. On the first, there is the horse, the head drawn out to resemble a bird's bill and some marks about it, which are neither Ogham nor Runic characters, but which may be regarded as a rude representation of stars and clouds. At one side is a wheel. On the second coin, there is depicted the horse with wings. On the third coin, the horse has a human face; it is being driven by a figure with a whip and is striding over a man prostrate.



To interpret the signification of these designs we must go to India, where we shall find that "Indra is the son of Dyaus, the gleaming heaven, and he is seen in the dazzling orb, which seems to smite the thunder clouds and compel them to give up their prey. In his hands he holds a golden whip, and he is borne across the heavens in a flaming chariot, drawn by the tawny steeds, the Harits." Thus Indra is the Indian sun-god, who drives with his horses through the heavens. As the bringer of the rain and also of the harvest, he is the god, whose power is most earnestly invoked by his Hindu worshippers. The sun symbolises creative power, the horses the sun's rays.

On the first coin we have the horse, in the sky, surrounded by or rather among stars and clouds, having a bird's head, with a seed in its bill, symbolic of the first creation or of the yearly production of the vegetable world, scattering seeds that the earth may "bring forth grass and herb, yielding seed, after its kind." He has the wheel, emblem of the sun at his side.*

On the second, the winged horse is figurative of the sun passing through the sky.

On the third, the horse is depicted human-headed to imply intelligence and mind—he is not self-impelled in his career, but is driven by Indra, the sun-god himself. The man prostrate under the horse, shows that the horse with its driver is careering over *man* above the earth.

The horse and wheel being figurative of the sun rolling in his course through the space of heaven, we have in them a type of the earliest and nearly universal worship of that orb as creator, by its light and heat calling the herb into being. More correctly the adoration may be regarded as the worship of the visible sign of the unseen First Great Cause, the luminary being in its glory the symbol of life and a manifestation of God himself—in its setting typical of death and burial, in its rising of the resurrection. In the worship of the Parsis, Mithras is the angel, presiding over the sun, sometimes the sun himself. In the "Nihvi-Yasht", Ahuramazda (First Cause) says "I created Mithra, who rules over large fields, to be of the same rank and dignity as I

* In the island of Mull, in 1767, in consequence of a disease among cattle, a wheel was turned *from east to west*, until the needed fire was produced. On the Moselle, so late as 1823, a huge wheel bound with straw, was set on fire and rolled down hill, an invocation that the summer might be hot and the vintage consequently generous.

myself am Mithra gives those who do not belie him swift horses."

The famous Carthaginian coin, representing the horse's head, must not be forgotten, nor the lines of Virgil, preserving the tradition of its finding, and of what it was a type.

"Effodere loco signum, quod regia Juno
Monstrarat, caput acris equi; sic nam fore bello
Egregium, et facilem victu per sæcula gentem.

Æn. i., 443.

On the chalk hills of Berkshire may be seen the "Great White Horse," striding along at full gallop, as he has appeared for many centuries. The figure of a horse has been cut out of the turf, four feet in depth, exposing the white chalk beneath.* It covers some acres, I believe, in extent, and being on the side of a high hill, is a prominent object in the landscape. Periodically the "scouring" of the sculpture in the turf takes place, whereby the form of the horse has been preserved fresh and intact to this day. The "scouring," with its attendant festivities and athletic games, has been graphically described by Hughes. The white horse was there in the 12th century and long before. In a cartulary of Abingdon of that period, land is described as "prope montem, ubi ad album equum scanditur." The figure has a bird-like head, with open jaws, much resembling the bird-head of the horse, on the coin figured 1. Nothing is known of its origin, but it may be supposed to owe its existence, in some manner or degree to the ancient "cultus" of the horse, by our forefathers.†

The horse represented on the coin No. 1, has the ears of a horse, but the head and bill of a bird, like a stork or crane. It holds within its extended jaws a ball. Cox in his "Aryan Mythology" mentions that in mythological tales we constantly meet with a ball, often a golden ball (as the golden apples in the gardens of the Hesperides), which is lost or killed when the sun

* It is very singular to find in the valley of the Mississippi, a similar representation of animals, esteemed sacred by the early inhabitants, but made in relief, instead of as the Britons did, in intaglio. Amongst the animals so represented is the elephant—did the mound-builders bring their knowledge of the animal from India?

† The snow-white steed still appears on the ensign of Kent as it anciently did on the shield of the old Saxons in Germany. Hence the white horse is still borne on the royal shield of Brunswick-Hanover (Palgrave).

risers, but brought back by the sun the following morning. This is found in the mythology of all nations, receiving a local colouring according to the climate of the country. In the north, before the dawn or summer child can be won, there must be a battle with the powers of frost and snow, and the sun must be aided by birds, which denote the clouds—the bright light-tinted clouds assuming the forms and names of birds, to remove the rocks of ice and snow.

On the coin we have the sun bringing back the dawn, and the head of a bird is given to the horse (sun) as with the break of day the birds take their first flight, and specially earliest welcomers of the morn, the long-billed cranes and storks. The ball held in the bird's mouth may be considered as an additional symbolic expression.

"Storks are unmolested in all Moslem countries, and protected in Switzerland, Western Germany, and Holland. The Dutch regard them as birds of good omen, and happy is the roof where they make their domicile. A stork's nest is the crown of the house. The transformation of storks into men is a popular belief in Friesland and Prussia. The stork is known in Holland as a fire (sun) fowl. In Hesse, a waggon-wheel—emblem of the sun—is laid upon the roof, for the stork to build his nest upon. The house on which he builds is safe from fire, and his nest must not be disturbed, lest the house should be struck by lightning." (Past in the Present).

The design on the coin, figure 2., is seen on several British coins—in one instance, with the crescent moon.

The silhouette of the head and neck of the Berkshire white horse, taken from the engraving in Hughes' interesting volume, gives us the head and neck of a bird, with the ears of a horse.



The neck is long extended like that of a stork, and the jaws or rather bill wide open, as if grasping something. It may be conjectured, that when first carved on the hill side, the jaws were extended to complete the stork-like bill, holding a ball. The resemblance betwixt the representation on the coin and that on the hill side is so marked, that we may fairly consider that the designers of both had the same mystic idea in common, and that the bird-like horse was the offspring of the reverence of the Early Britons for the great luminary. In the rude relief on the coin and the ruder sculpture on the hill side, we have much what the Greeks did, when on an amphora they pictured the Sirens of the Odyssey by birds with womens' faces.

In the Triads, the ancient Welsh poems, we have several marvellous horses mentioned, such as the wonderful mare of Tevinyen, which foaled on the night of every first of May, the great feast of the Sun among the Celts, and no one ever knew what became of the colt. There also we read, "The white horse took it at a gallop through thirty cities and three hundred towns, which had ceased to be Roman."

Many other superstitions are common to India and Britain. For instance the virtues of the mountain ash, the rowan tree, are well known. The Hindu master of a herd, in spring, cuts a rod of it and strikes his cows that they may yield milk. In Westphalia, and also in Sweden, on the 1st of May, he does the same thing, with the same prayer. In Wales, on a certain day in the year, every person wore a cross of the wood to avert evil spirits.* In Cornwall a sprig of rowan is carried as a charm against an evil wish, or as a remedy against disease, whilst in Scotland the dairy-maid will not forget to drive the cattle to the summer pasture with a rod of rowan tree, which she carefully lays by until the time comes to drive them home again with the same. Especially in Britain do Indian superstitions seem numerous, and more usually met with than on the Continent. The Celts were the earliest wave that left the Aryan home, on their journey towards the setting sun. The first of these hordes of colonists, stated by historians to have been Buddhists from the north of India mingled with Brahmins, driven on by following migrants, ultimately settled in Britain. They probably had all the early

* Here the wood with a Pagan superstition makes a Christian cross, a remarkable instance of an object of heathen superstition being used to form a Christian emblem.

Aryan traditions and preserved them. The Celtic prehistoric stone remains of Britain are similar to those found in Northern and Western India,* and the language of the Gael is not less strikingly similar to the tongues of Eastern peoples. Our hills and rivers have maintained their Celtic names—many being similar to the Persian, for instance Chat-moss, Chat in Persian signifying water.

The Britons are described by Strabo, B.C. 50, as being indigenous tribes, retaining traces of ancient customs. Cæsar, B.C. 55, tells us that the Britons had customs of their own, different from others; that the Druids, their priests, were learned in the magic and learning of the East; and that Britain, not Gaul, being the proper and high seat of Druidism, those who wished to be perfect in the system travelled to Britain for instruction. Pliny writes, "Why should I speak thus of magic art, which has spread even beyond the sea, and to the extremities of nature. Britain cultivates it with so much enthusiasm and with so many ceremonies, that we fancy it was from thence that the art was communicated to the Persians." It will be remembered that the "Magi," were the Parsis, priests of the Persians. The Druids are considered to be distinctly Brahminical in aspect. They were mono-theists, believing in transmigration and in another life. According to Pomponius Mela A.D. 45., they were Astronomers and Philosophers. "The Druids profess to know the form and size of the earth and universe, the motions of the heavens and stars, and the intentions of the immortal gods." By Cæsar they are mentioned as measuring time by *nights* and not by days, the days being reckoned as parts of the preceding nights.† In other customs, they differ from the rest of the world." Lucan, who wrote about 100 years after Cæsar's invasion, thus describes the Druids,

"And you ye Druids, free from noise and arms,
"Renewed your barbarous rites and fearful charms,
"What God, what Powers in happy mansions dwell,
"Or only you, or all but you can tell.
"To secret shades and unfrequented groves,

* See Captain Congreve's paper on Druidical remains in the Nilghirry hills, Madras, and Captain Meadows Taylor's book "Cairns, Cromlechs, Kistvaens, and other Celtic, Druidical, or Scythian monuments near the village of Raynkolla."

† This practice is of eastern origin, as shewn in the Hebrew Scriptures, "And the *evening* and the morning were the first day." (Genesis).

"From world and cares your peaceful tribe removes.
 "You teach, that souls, eased of their mortal load,
 "Nor with grim Pluto, make their dark abode,
 "Nor wander in pale troops, along the silent flood,
 "But on new regions cast, resume their reign,
 "Content to govern earthly frames again.
 "Thus death is nothing but the middle line,
 "Betwixt what lives, will come, and what has been.
 "Happy the people by your charms possesst !
 "Nor fate, nor fears disturb their peaceful breast,
 "On certain dangers, unconcerned they run,
 "And meet with pleasure, what they would not shun ;
 "Defy death's slighted power and bravely scorn
 "To spare a life, that will so soon return."—(Pharsalia).

Albion itself seems to have acquired, no doubt from its being the high seat of worship and learning, possessing its Bards or poets, its Vates or sacrificers, and above all its Druids, priests versed in all Eastern lore, whether in philosophy, moral or natural, or in astronomy, a weird and almost awful reputation. "In Germany," says Kuhn, "it was of old an established belief, that Britain was the island of souls, and such to this day it is believed to be, under its new name of England." It is in Armorica a popular belief, that the dead betake themselves, at the moment of their departure, to the parish-priest of Brasper, whose dog escorts them to Britain.*

From what has gone before, the inference I think cannot be resisted, that in this island, more than anywhere else in Western Europe, superstitious practices, connected with early Eastern forms of worship, might be expected long to linger : for in England pre-eminently did a priesthood, evidently eastern in origin, hold sway so lately as the invasion of Britain by Julius Cæsar ; and if these Druids, with their Vates or sacrificers, came from India with the earliest emigrants from the East, what is more likely than that they should have brought along with them the rites and venerations of their native country. And as chief among the sacrificial rites of India was the Aswamedha, there is strong reason for believing, that traditions of the wondrous grandeur and solemnity which accompanied the sacrifice of the white horse, emblem of the sun, in their fatherland, would long dwell in the

*Here again we have an Indian superstition. Vedic accounts say, that the wind in the shape of a dog, accompanies and protects the soul on its journey. In German mythology, the dog is an embodiment of the wind, and attendant on the dead.

memory of the early colonists of Britain—the “sacred island,” where the priests were in Pliny’s day so learned in the magic of the East, as even to bear the reputation of having sent its wisdom to Asia, instead of owing it to importation from the East.

The dominion of Rome with the introduction of its own gods and mythology supplanted the ancient laws, customs, and religion of Britain—the Druids were exterminated and their religion died with them. Remains of it still existed at the time when the pure Christian faith overturned it, replacing pagan rites and sacrifices by the pure “evangel” of Christ. In the seventh century Christianity prevailed in the Northumbrian highlands, and a church at Elsdon then arose. At that early period in the history of Christianity in England, many pagan superstitions and acts of worship were mixed with the simple rites of the new religion, and as I have mentioned before, the tolerance of the early church for the practices of Heathendom was very great. It seems to me to be within the pale of probability, that at the installation of the first church in Elsdon, the sacrifice of a horse as an act of sanctification of the building may have taken place. It was a sacrifice common in early times at the raising of buildings, and being in solemnity next to the human, what more likely than for it to be used by the half-savage and newly, and but partially, converted inhabitants of this wild district. And as the Gauls were described not many centuries before as fixing the heads of horses on high, as an act of worship and veneration for their gods, what more likely, than that their kinsmen here should, even perhaps with the approval of the missionaries, show their veneration towards their newly acquired religion, by fixing the heads of the sacrificed horses on the church. The practice thus commenced in faith, would naturally be repeated with less and less belief in or understanding of its significance, as oft as a new church arose on the ruins of the old, until at last in the fifteenth or sixteenth century, we find the rite still in practice, as shewn by the preparation of a chamber in the belfry of the church, specially constructed to hold the horse heads.* Or the horse heads may have been considered as emblems of Pagan sun worship, and the three heads of the animal so especially sacred to Heathendom may have been raised aloft in the church tower, as a sign of the victory of the Tri-une God over Paganism, even as

*The present church belongs to about the year A.D. 1400; the spire may be of even later date.

we at the present day hang up in our churches the banners gained in battle from a defeated enemy.*

Whatever was the significance attached to the act by the workmen in the fifteenth or sixteenth century, who constructed the chamber to hold its strange occupants, it is, I think, very plain that in the (so far as I can learn unique) discovery so lately made, has been laid bare in the nineteenth century, a relic or survival of that early "cult" of the horse, the type of the sun, which attained its zenith three thousand years ago, in the magnificent rites which accompanied the Aswamedha or Great Horse sacrifice of India. The fact of this symbol of the sun having been discovered in a Christian church, erected at a remote time by a rude people, is not more surprising than to read in 2nd Kings, xxiii, of King Josiah taking the horses of the sun and his chariots from the great temple of Jehovah at Jerusalem.

* Beneath the eucharistic altar of Notre-Dame, in Paris, were discovered stones with the symbols and imagery belonging to ancient Heathen religion. These votive monuments had evidently been placed there, says Palgrave, "as trophies of triumphant Christianity."

On Skeletons found at Ladykirk Church, Berwickshire. By the Rev. WILLIAM DOBIE, M.A.

IN opening up a portion of the floor at the east end of Ladykirk Church, whereon would have stood the high altar (had the edifice ever been occupied by the Roman Catholics), the workmen came upon a mass of human remains lying four feet from the surface, and in the order of individual skeletons, but across each other at every conceivable angle as if they had been thrown hurriedly into a common grave. Strange to say at the depth of ten feet there was disclosed a plain unpolished freestone flag 2½ft. by 2ft., which, being carefully removed, was found to have rested upon a handful or two of soft dust and underneath the dust a flag of dimensions similar to that on the top. The dust seemed to be all that remained of what must many centuries ago have been the body of a child. During the restoration of the church in 1860-1, it was found necessary to erect a scaffolding inside for the purpose of reaching the arched roof, and the workmen, in digging a hole in which to fix their uprights, again came upon human remains and not wishing further to disturb them, other methods were employed by which the work was successfully carried out.

Brief Notes on the Geology of the Country round Elsdon, in Northumberland. By G. A. LEBOUR, M.A., F.G.S., Professor of Geology in the University of Durham College of Physical Science, Newcastle-on-Tyne.

ALTHOUGH the writer of these notes has, at various times, spent many days and even weeks in working out the detailed geological structure of the neighbourhood of Elsdon, he must confess that the nature of that structure was such that at his departure from the district the details remained masters of the field—not he of them. Concerning the larger facts of the region there is no doubt left; but the *exact* horizon of some of the beds, and the exact nature of some of the faults which dislocate those beds—these are points on which evidence is yet needed, but which we may expect to see satisfactorily cleared up when the Geological Survey maps of the area in question come to be published.

If we tabulate the various members of the geological series that may be studied within, say, four or five miles of Elsdon, we get the following column :—

RECENT DEPOSITS.

Rainwash.
Calc-tuff.
Alluvium.
Peat.

SUB-RECENT DEPOSITS.

Old Peats and Alluvia,

DRIFT DEPOSITS.

Moor Gravels.
Moraine heaps.
Re-assorted Boulder Clay.
Boulder Clay.

LOWER CARBONIFEROUS.

Part of the Bernician Series.

IGNEOUS.

Dolerite.

The *Rainwash*, a deposit the formation of which is of the highest interest, as illustrating many important processes, and which is far too little studied, is common on every hill-side, and daily adds its quota of sediment to the Alluvia of the valley bottoms—sand, coarse and fine, from the grits and sandstones which form the great mass of the fells hereabouts, clay from the shales accompanying the grits, and in much smaller quantity small

grains of ironstone from some of those same shales, of whinstone (dolerite) from the dyke that crosses the country, and of a number of miscellaneous stones from the drift deposits.

Calc-Tuff is perhaps better shown near Elsdon than anywhere else in Northumberland. Springs throwing up the hard water and depositing the light, porous, limy travertine abound here, and a little to the east of Dykenook, the soft greyish mounds cover quite a large extent of ground. If situated in some fashionable neighbourhood these springs would long ago have won renown as "petrifying" wells.

Alluvium, the result, to a great extent, of Rainwash, sandy, gravelly of every degree of coarseness, loamy, and in a few cases clayey, occurs here in some quantity, forming the great flat haughs by the river Rede, which, near Elsdon, is at its deepest and most sluggish, and the smaller ones by Elsdon Burn and the other minor streams that water the country. It will be noticed that when gravelly, the stones are chiefly of sandstone, limestone, and (sparingly) of basalt, *not* (except perhaps a few rare pebbles derived from the drift) of the Cheviot Porphyrite which is so common in the gravel alluvia of Coquetdale.

Peat also abounds, from that now forming in the wet bogs so numerous on the heights round the village, to ancient peats showing where similar bogs once were, and might be once more, should the ancient natural conditions—altered by human agency—ever be allowed to prevail again.

The Sub-recent Deposits are not specially well shown in the district, but they are represented by the so-called *peat marls*, or white and yellow clayey deposits, which occur at the base of almost every peat moss. These can be seen in drainage cuttings in the large bogs about Harwood.

The term *Moor Gravels* was applied by the writer a few years back to some problematical pebbly deposits, found in the western part of this county, in irregular patches and mounds on high moorlands, far above the ordinary kaims or eskers to which they otherwise bear some resemblance (1). Gravels of this kind are widely though thinly spread to the East of Elsdon.

Moraine heaps. A beautiful example is to be seen in the little Lisle Burn Valley, near East Woodburn, some distance, it

(1) See Lebour's "Outlines of the Geology of Northumberland," (1878), p. 14.

is true, from our centre, Elsdon, but still within the prescribed five miles. (2)

Boulder Clay and its immediate product *Re-assorted Boulder Clay* do not, fortunately for the geologist, cover much ground about Elsdon. They are found, however, in patches obscuring the lower slopes of the valleys, and often forming the concave curve at the foot of the hills, but being generally covered with grass it is only where a road cutting or a broken burn-bank exposes the glacial beds, that the polished and scratched boulders attesting their age can be seen in their stiff clay matrix.

The *Lower Carboniferous Rocks* however furnish the stone framework of the entire district. This great division, it will be remembered, has been in Northumberland, the ancient *Bernicia*, split into two members, the *Bernician* above, regarded as the equivalent of the Carboniferous or Mountain Limestone Series of the more southern parts of England, and the *Tuedian* below, the equivalent of the Calcareous Sandstone Series and part (at least) of the Upper Old Red Sandstone of Scotland. (3) Of these the *Bernician* Series is alone represented in the tract of country under notice, and part of that series only, viz.: the *Lower Bernician*. This *Bernician* Series, both upper and lower, consists of beds very similar throughout, grits and sandstone predominating (and thus sufficiently putting such names as Carboniferous Limestone Series and Mountain Limestone, out of court as actually misleading), shales, some with and some without nodules of ironstone, calcareous and non-calcareous limestone in beds rarely exceeding twenty feet, coals usually not thick, but not very inferior in quality to those in the coal-measures proper, and underclays. The general nature of these beds has been described over and over again, in the most accurate manner, in the Transactions of this Club, by the late Mr George Tate, F.G.S., and need not be repeated here. The term *Bernician*, however, is somewhat new in its present application, (4) and it may be well to remind the reader that the Upper *Bernician* is in a general way (that is without a hard and fast line of division, either above or below), the representative of the Yoredale Rocks, (5) and the Lower Ber-

(2) Lebour's "Outlines of the Geology of Northumberland," p. 15.

(3) See "Transactions of the North of England Institute of Mining and Mechanical Engineers," Vol. xxv. (1875-76).

(4) See "*Geological Magazine*," Decade ii., Vol. iv. (1877).

(5) *Ibid.*, Decade ii., Vol. ii. (1875), p. 539.

nician that of the Mountain Limestone of Derbyshire. But whereas the Yoredale Rocks proper, and the Mountain Limestone are very different from each other, and can be separated with the greatest ease in their typical districts, the Upper and Lower Bernician are almost identical in lithological characters, a good line of separation between them has yet to be found, their fossils are to a very large extent identical, and their use as stratigraphical terms is one of convenience mainly. So perfect is the faunal identity of the Bernician Beds, from top to bottom—throughout those ten thousand feet of rock, which Mr W. Topley, F.G.S., was the first to announce as being the thickness which this formation attains in Northumberland—(6) that Professor De Koninck, the greatest living authority on Carboniferous marine Palæontology, correlates the entire series (on the strength of the fossils only), with the *Visé Limestone*, viz:—the uppermost of the Mountain Limestone divisions in Belgium.

About Elsdon then, we have sandstones and grits forming crags and bold escarpments, shales worn into more retiring features, and limestones tolerably numerous and hard enough, but too insignificant in thickness to show very prominently in the landscape. To these limestones are due the sinter deposits which have been already mentioned, and to them also are due the swallow-holes, which are so characteristic of these moors. About Ottercaps and near the Black Stichel—a hill up the Elsdon Burn—the number of these broad, deep, funnel-shaped grassy hollows following at short intervals the *upper* line of the outcrops of the various beds of limestone, is simply amazing. Some of them (at the Black Stichel, for instance), follow the line of subterranean streams, emulating in a small way the great river caverns of America, and accumulating a small-pebbled blackish limestone gravel of their own—underground alluvium, in fact, which eludes the mapping powers of the Geological Surveyor.

The limestones are of the ordinary Bernician character, full of fossils—*Productus* of many species with *Pr. giganteus* conspicuous among them, corals (*Lithostrotion junceum* the commonest as usual)

(6 In a memorable account of the progress of the knowledge of the geology of the County, given by Mr. Topley at the Alnmouth and Alnwick meeting of this Club, in 1879, and unfortunately not yet published. The writer had given the thickness as “at least 8,000 feet” in 1878, a statement much disputed at the time, and even now not always accepted. See “*Outlines of the Geology of Northumberland*,” p. 33.

compound and single in large quantities, crinoid stems often forming whole "posts" of stone—these are the most obvious organisms, but they are not, as a rule, easy to obtain, being one with the stone and not separable without great skill and luck. In the earthy and shaly bands between the limestone posts many foraminifera are also found (7), as at Colster Cleugh, within a mile of the village where a handful of "stuff" yielded eight species.

Now these beds of limestone are so constant, or rather relatively to the other beds of the series they are so constant, that it has been the custom of geologists to rely chiefly upon them for their horizons. But in this Elsdon locality there are a number of faults and disturbances of the strata, which disconnect it, so to speak, from the adjoining areas where the succession of the beds is well known. It is owing to this, that the writer must confess his inability, to correlate *exactly* these limestones with those of the more southern, or of the more northern portions of the county. All he can affirm is, that they are in the Lower Bernician Series (bearing in mind that there is no hard and fast line between that and the Upper Bernician), and above the Harbottle Grits—on or about the horizon of the Rothbury Grits. (8) After all this is as near an approximation as most people can require.

Although not forming very salient features the limestones are apt to form picturesque waterfalls, wherever they cross rapid-running burns, and these are not wanting here. At Todholes Syke where the Burn runs down a steep slope of limestone, a vein containing conspicuous strings of galena is visible. This is within a few minutes walk of the village.

But besides sandstones, shales, and limestones, coals occur also in the district, and of no mean thickness for seams of Lower Carboniferous age. They have been worked at Grasslees, between Elsdon and the Coquet, at several places in and near Bills-moor Park, and close to Elsdon, between Otterburn and the village. Near the turnpike a seam has frequently been worked which has been proved to attain a thickness of nearly six feet,

(7) See Brady's "Monograph of Carboniferous and Permian Foraminifera," Palæontographical Society's Publications for 1876, p. 29

(8) In his "Outlines" the author inadvertently called these grits the *Simonside Grits* (See p. 41). Mr W. Topley gave them the more appropriate name of Rothbury Grits (See *Guide to Rothbury and Upper Coquetdale*, 1873). The term *Simonside Grits* has long been in use for some Yorkshire deposits.

but water and the presence of a number of "stone troubles" and faults have hitherto prevented continuous working.

Of the many faults affecting the beds thus briefly described, the writer will say nothing, since his knowledge respecting them is still very imperfect. He would, however, call the attention of observers to the very high dips of the sandstone rocks in the Grasslees valley, at the southern base of the Beacon Hill, as being the indication, probably, of a very important line of dislocation, an accurate knowledge of which would in all likelihood, go far to explain the apparently singular relations of the Rothbury and Harbottle Grits, in Upper Coquetdale.

Of igneous rocks the Elsdon ground contains but one specimen. That, however, a good one. A great whinstone dyke (dolerite), belonging to the North-East and South-West Series of Dykes of this County, and of which the writer has elsewhere written as follows:—"The *Lewis Burn* or *Troughend Dyke* is first seen in the County in Short Cleugh, a little valley formed by a tributary of the Lewis Burn; thence good exposures are frequent, as in the railway cutting east of the Belling, crossing the Tarret Burn at High Green, *in the field just north of Troughend Hall, in the Elsdon Burn between Elsdon and High Carrick, on the road from Elsdon to Billsmoor; and lastly (and perhaps best of all), in a deep cleugh in the hills between Billsmoor Park and Darden Lough, whence it has been traced to the south of Tosson, as I am informed, by Mr Topley.* This dyke is sometimes very inappropriately called the Falstone Dyke." (9)

The italics in the above passage, denote the words specially relating to the Elsdon district.

(9) See "*Outlines*," p. 50.

The named Stones of Northumberland ; being a list of huge stones, single and in groups, in situ and detached, to which local names have been given in the County. By G. A. LEBOUR, M.A., F.G.S., etc., Professor of Geology in the University of Durham College of Physical Science, Newcastle-on-Tyne.

IN the following list I have excluded two important classes of named stones almost entirely : namely, the crosses which abound in Northumberland, of which only such as stand upon parish or other boundary lines have been retained, and the still more numerous named stones along the coast. With these exceptions, I have entered every big stone, standing stone, portion of rock (not entire crags), known to me either personally or by information. Most of them I have visited myself. The latitude and longitude, as derived from the six inch ordnance maps, I have given in each case, with such brief remarks as might help any one to find and recognize the localities in which the stones occur. Whenever a stone marks a boundary between countries, counties, parishes, or townships, the fact has been carefully noted.

I was led to observe the stones in question by the late well-known antiquarian, Dr. Black, of London, who held certain views as to their connection with some ancient long-lost system of topographical mensuration, which the present list is by no means calculated, I fear, to confirm.

As to the importance of preserving records of such objects as these named stones, I would refer the reader to a paper published by Mr James Hardy, in 1861, entitled—"Legends respecting huge stones" (Alnwick), in which a number of interesting references are made to traditions and historical facts connected with them ; and I would add that, the connexion between them and the history of our local boundaries, is probably closer than might be thought at first sight, whilst philologically there is interest in the subject as well.

Any information as to any stones omitted in this list, and as to traditions respecting those included in it, is earnestly requested and will be thankfully received.

Names of Stones.	Latitude.	Longitude.	Remarks.
Duddo Four Stones	55° 41' 12''	2° 6' 38''	Used as a trigonometrical station.
Chapel Stone	55 43 34	2 4 58	Marks the site of the old Chapel at Thornton.
Holy Rock	55 34 19	1 52 47	A pillar of basalt standing out from the escarpment of the Great Whin Sill at Spindleton Heughs, locally regarded as the rock over which Childe Wynde threw his horse's bridle when about to attack the Laidley Worm.
Bridle Rock	55 35 54	1 45 21	
The Grey Stone	55 32 27	2 14 0	Boundary between England and Scotland.
Tuppie's Grave	55 32 11	2 13 42	Township Boundary.
The Two Grey Stones	55 32 8	2 13 38	
Cloven Stone	55 32 18	2 7 7	Just " East " Bendor turnpike gate, Akeld.
Battle Stone	55 33 32	2 3 0	
Yeaverling Stones	55 33 27	2 6 47	On Yeaverling Bell, supposed to be druidical (?)
Battle Stone	53 34 1	2 6 41	Between Old Yeaverling and Yeaverling.
Tom Tallon's Grave	55 32 45	2 6 28	Just South of the summit of Tom Tallon's Crag, marking a tumulus (?).
Hurl Stone	55 30 58	1 56 14	Parish Boundary, on Lousy Law.
Ox Eye	55 31 22	1 51 21	
Gill's Chest	55 30 46	1 46 45	Township Boundary
Hanging Stone	55 27 55	2 10 12	Close to the Boundary between England and Scotland.
Standing Stones	55 28 43	2 2 45	Nine stones, supposed to be 'Druidical remains,' just West of Threestone Burn House, the name of which is worth noting.
Percy's Leap Stones	55 28 18	1 55 15	Site of the Battle of Hedgeley Moor, 1465.

Names of Stones.	Latitude.	Longitude.	Remarks.
Percy's Cross	55° 28' 1"	1° 54' 49"	Close to Township Boundaries.
Shivering Stone	55 25 12	2 9 18	Just South of the Bloody Bush Edge.
Tod Stones	55 24 1	2 3 15	On the banks of Spartley Burn.
Malcolm's Cross	55 25 35	1 41 55	Malcolm I. slain here, 1098.
Broken Stirrup	55 25 52	1 38 45	In Ratcheugh Crag.
Phillip's Cross	55 21 7	2 24 4	Close to the Boundary between England and Scotland.
Outer Golden Pot	55 21 31	2 18 30	Parish Boundary. On the site of Watling Street.
Middle Golden Pot	55 21 3	2 17 43	On the site of Watling Street.
Grey Yade of Coppath	55 23 42	2 1 52	
The Priest and Clerk	55 20 28	1 54 52	
Kail Stone	55 20 17	1 52 31	
Grey Mare	55 20 51	1 49 20	Close to Wellhope.
Gowk Stone	55 21 6	1 47 55	Three Parishes meet at this stone.
Bigge's Pillar	55 21 27	1 48 27	
Union Stone	55 22 15	1 46 47	Parish Boundary. Three Townships also meet here.
Green Needle Stone	55 18 36	2 33 30	On the Boundary between England and Scotland.
Kielder Stone	55 17 43	2 43 20	On the Boundary between England and Scotland. This is the stone referred to in the Ballad of the Cout of Kielder.
Jenny Storie's Stone	55 17 22	2 35 32	On the Boundary between England and Scotland on Peel Fell.
Girdle Stone	55 18 16	2 27 50	Near a Parish Boundary.
Grey Mare Stone	55 18 5	2 26 18	
Three Kings	55 18 6	2 21 19	
Hawk Stone	55 20 13	2 23 0	East of Hawkhill.
Crow Stone	55 18 41	2 11 28	Parish Boundary.
Blue Sow	55 17 18	2 10 24	
Pedlar's Stone	55 17 52	2 6 12	Parish Boundary.
Grey Mare	55 16 52	2 10 12	

Names of Stones.	Latitude.	Longitude.	Remarks.
Drake Stone	55° 20' 1''	2° 7' 30''	The largest of the single named stones of the county.
The Five Stones	55 17 43	2 4 0	All in one line near the Beacon Hill, only three still standing.
Main Stone	55 17 0	1 58 39	Township Boundary.
Kate and Geordy	55 17 8	1 58 23	
Little Church	55 17 24	1 57 29	
Kate's Kist	55 18 38	1 55 43	
Cockcrow Stone	55 18 45	5 18 14	
Black Sow	55 19 15	1 49 35	
Bumping Stone	55 20 15	1 38 57	Parish Boundary
Bore Stone	55 16 21	2 35 45	
Hanging Stone	55 16 37	2 34 1	
Leaping Stones	15 16 40	2 33 37	
Devil's Lapful	55 13 41	2 33 46	
Common stone	55 14 50	2 28 40	Close to the summit of Monkside.
Dove Stones	55 16 27	2 29 55	
Greymare Stone	55 16 34	2 20 19	
Graymare Stone	55 13 39	2 21 28	
Fairy's Kirk	55 14 14	2 22 13	
Standing Stone	55 16 2	2 16 42	
Eve Stone	55 15 54	2 16 0	
Hanging Stone	55 14 40	2 16 50	
Percy's Cross	55 14 13	2 11 33	Near Otterburn.
Cooper Stone	55 16 46	2 11 0	
James' Cross	55 16 32	2 8 56	Township Boundary.
Blood Bush Pillar	55 12 44	2 40 21	On the Boundary between England and Scotland.
Seven Sisters	55 13 52	2 37 31	Close to the Boundary between England and Scotland.
Standing Stone	55 12 47	2 26 48	Near a Parish Boundary.
Grey Mare	55 12 19	2 24 17	Close to Grey Mare Moss
Gray Mare	55 13 14	2 16 45	Parish Boundary.
Blackheugh End	55 13 2	2 16 13	The last stone of Blackheugh Crag.
Gray Stone	55 12 19	2 16 21	Township Boundary.
Rob of Risingham	55 9 54	2 9 18	Blasted. Remains of Roman sculptured stone.
Gun Stone	55 11 5	2 3 2	Parish Boundary.
Loughing Stone	55 10 47	2 3 5	Parish Boundary.
Peter's Stone	55 13 9	2 2 12	Close to a Parish Boundary.

Steng Cross	55° 12' 41"	2° 3' 36"	Parish Boundary, close to Winter's Gibbet.
Grey Mare	55 11 2	2 6 57	Parish Boundary.
Baker's Chest	55 10 23	1 51 34	
Long Sal	55 7 18	2 33 57	Near a Parish Boundary.
Rocking Stone	55 9 10	2 33 20	
Riding Stone	55 8 25	2 15 17	In the River North Tyne by Bellingham Mill, almost on the Township Boundary.
Piper's Chair	55 7 44	0 55 7	{ On Shaftoe Crag, South Side.
Devil's Punch Bowl			
Tailor and his Man			
Poind and his Man	55 7 58	1 53 48	Associated with a tumulus, close to the site of the Devil's Causeway.
Hunter's Stone	55 7 58	1 52 45	Just East of the last.
Rutter's Stone	55 5 55	2 27 58	Close to the ruins of Rutter's Hall.
Hotter Stones	55 4 13	2 26 18	Near Mossy Walls and Haining Head.
The Split Stones	55 5 15	2 23 51	{ Three stones marking changes of direction in the Township Boundary.
The Flat Stone	55 5 13	2 24 7	
The Large Stone	55 5 14	2 24 15	
Rimmin's Cross	55 3 24	2 18 49	Parish Boundary.
Carlin Stone	55 4 28	2 15 18	On the flank of Carlin Hill.
Molly's Stone	55 2 30	2 20 42	
Long Stone	54 59 31	2 20 46	
Fairy Stone	55 0 52	2 19 41	Just north of Borecovicus.
Written Crag	56 0 28	2 5 46	"Petra Flavi Carantini," South of the Roman Wall.
Standing Stone	55 1 53	2 0 41	Modern (?).
Standing Stone	55 1 42	1 56 48	Ancient (?). At the Standing Stone Farm House.
Monk Stone	55 1 27	1 26 18	
Eadeley Stone	54 57 29	2 34 0	County Boundary, about 36 chains South-West of the ruins of Eadeley Stone House.
The Chair	54 56 26	2 26 43	On Ramshaw Fell.
Hanging Stone	54 57 2	2 11 8	
Standing Stone	54 53 53	2 32 51	By the Glendue Burn.
Standing Stones	54 53 12	2 2 29	Parish Boundary.
Donald's Grave (stone?)	54 53 20	1 59 58	
Grey Nag.	54 49 19	2 31 19	Parish Boundary.

High Haddock Stones	54	49	24	2	13	0	
Sheriff's Stone	54	49	21	2	9	0	County Boundary
Beggar's Rest	54	49	13	2	9	23	County Boundary.
Rookhope Edge Stone	54	48	5	2	10	5	County Boundary.
The King's Stone*	55	38	22	2	11	2	Close to trigonometrical station.
Big Nichol*	55	40	12	2	8	40	Between Tiptoe Mill and Tiptoe Throat, on the right bank of the Till.

* These two stones should have been entered fourth and fifth in the early part of the list, the order followed being that in which the six-inch ordnance maps of the county are numbered.

Native Jasper. By Mr JAMES THOMSON, Shawdon Gardens.

THE Jaspers found in Ramshope Burn, near the head of the Reed water, are not composed of true volcanic rock, but a conglomerate, made up of water-rounded pebbles of lava mixed with other pebbles of Silurian Graywacke. The lava pebbles are composed of porphyritic rock, much the same as those of Coquetdale, and like them containing many cavities filled with jasper. Sometimes these Jaspers form the whole or nearly whole of a pebble and as they resist disintegration very much better than porphyritic, they are found in streams washed down by floods, sometimes beautifully polished by the action of the water. The specimens now shown to the members of this society were found in Ramshope Burn. This burn falls into the Reed through a deep gorge; the jasper pebbles roll from the face of the crumbling rocks into the stream below, and are by this means carried into the Reed-water. There is no doubt that the pebbles found in this place are capable of being worked into very pretty ornaments for the person, and for writing and toilet tables. Of course the value of these stones consists in their being found amongst our native hills.

I am much indebted to Mr T. C. Clough of the Geological Survey Office, whose acquaintance I made this summer in the Reed-water district, for the information he gave me regarding the formation of Jasper. As much of it is already known to members of your society, I need not repeat it again, but draw their attention to the beauty of the stone when it passes through the hands of the lapidary.

List of Fungi found in the immediate neighbourhood of Roxburgh. By Rev. DAVID PAUL, M.A.

THE following list of larger and less common Fungi is supplementary to the lists contributed by the late Mr A. Jerdon, Jedburgh, and published in the Transactions of the Club for 1863, 1866, and 1868. The species have not heretofore been recorded from the Border District, which is rich in Fungi, but has been as yet hardly explored at all. Mycology possesses at present the peculiar interest of being a somewhat fresh branch of botanical study, which may be expected to yield to the student not only new localities for the rarer forms, but many species new to Scotland, and to Britain. It is to be hoped that some of the botanical members of the Club will help to place it on better footing than it has hitherto had among us. The nomenclature in the list is, for the *Agaricini* and *Polyporei*, that of the 2nd edit. of Fries' *Hymenomycetes Europaei*.

1. AGARICUS (AMANITA) LENTICULARIS, *Lasch.* In mixed wood ; rare.
2. AG. (TRICHOLOMA) USTALIS, *Fr.* In woods ; not uncommon this year (1881) ; often in rings.
3. AG. (TRICHOLOMA) COLUMBETTA, *Fr.* In woods ; not common.
4. AG. (TRICHOLOMA) NUDUS, *Bull.* Not common ; a very pretty Fungus.
5. AG. (CLITOCYBE) CLAVIPES, *Pers.* In woods ; not uncommon.
6. AG. (CLITOCYBE) INVERSUS, *Scop.* In woods ; frequent.
7. AG. (COLLYBIA) STIPITARIUS, *Fr.* On grass root ; rare.
8. AG. (COLLYBIA) CONIGENUS, *Pers.* On fir cones ; much less frequent here than the somewhat similar *Ag. tenacellus*.
9. AG. (COLLYBIA) INOLENS, *Fr.* In pine wood ; rare.
10. AG. (MYCENA) ELEGANS, *Pers.* Rare.
11. AG. (MYCENA) PROLIFERUS, *Sow.* Not Common ; found growing abundantly in soil on a heap of old roots.
12. AG. (MYCENA) TENERRIMUS, *Berk.* In a green-house flower pot ; rare.
13. AG. (OMPHALIA) DEMISSUS, *Fr.* On turfy wall top ; rare. This is the *Ag. rufulus* of Berkeley's "Outlines."
14. AG. (OMPHALIA) GRISEUS, *Fr.* Among pine leaves.
15. AG. (PLUTEUS) PHLEBOPHORUS, *Dittm.* On old stump ; rare.
16. AG. (ENTOMOLA) CLYPEATUS, *L.* In garden beds ; frequent.

17. AG. (PHOLIOTA) *SPECTABILIS*, *Fr.* Densely cœspitose on decayed stump ; not common.
18. AG. (PHOLIOTA) *TOGULARIS*, *Bull.* Grassy bank of Tweed ; rare.
19. AG. (PHOLIOTA) *PUMILUS*, *Fr.* On wall top, in mossy turf ; rare. In company with *Ag. muralis* and *Ag. demissus*. Appears not to have been recorded in Scotland till this year, when it was also found by Rev. J. Keith, Forres.
20. AG. (FLAMMULA) *HYBRIDUS*, *Fr.* Cœspitose on old Scotch fir stump ; apparently uncommon.
21. AG. (NAUCORIA) *SIPARIUS*, *Fr.* Not common.
22. *CORTINARIUS MULTIFORMIS*, *Fr.* Under beech ; rare.
23. *LACTARIUS GLYCIOSMUS*, *Fr.* In mixed wood.
24. *LENZITES SÆPIARIA*, *Fr.* At Sprouston Ferry, on old timber ; rare.
25. *BOLETUS LARICINUS*, *Berk.* Under larch ; not uncommon here.
26. *POLYPORUS BRUMALIS*, *Fr.* On dead fir branch ; rare.
27. *POLYPORUS SANGUINOLENTUS*, *Fr.* On the ground in a wood ; rare.
28. *POLYPORUS VAPORARIUS*, *Fr.* On dead wood.
29. *IRPEX OBLIQUUS*, *Fr.* Covering barked fir-log in a wood at Rutherford ; rare.
30. *PEZIZA COCHLEATA*, *Bull.*
31. *PEZIZA HUMOSA*, *Fr.* On turfy wall top ; frequent.
32. *XYLARIA POLYMORPHA*, *Grev.* On an old stump ; not common.

Elsdon Mote Hills. By Mr THOMAS ARKLE, Highlaws,
Morpeth. With two Plates.

THE town of Elsdon lies on the western side of the brook of the same name, and the Mote Hills are situated on the other side of the stream, a little to the north-east of the town. For upwards of half a mile above Elsdon the course of the brook is through a narrow valley, there being a bank of considerable height on each side.

The hills occupy the southern point of the eastern bank, which from thence slopes down to the level haugh on the south side of town. These memorials of bygone times which are remarkably perfect, consist as the name implies of two hills, the southern or higher of which is 70 feet above the adjoining brook. The top

of this southern hill, which was originally nearly level, only declining a little towards the entrance, has at various times been much disturbed by diggings probably made in search of hidden treasure. It contains an area of 900 square yards, being 100 feet long and 80 broad, exclusive of the earlier rampart by which it is defended on the north and east sides. This barrier, the base of which is from 15 to 40 in width, the greatest height being 12 feet, extends from the western to the south-eastern point, where the entrance is placed. On the remaining side the hill is a little higher towards the edge, but this elevation is so very trifling that it has not been shown on the drawing. The heightened edge, however, leads to the inference that a portion of earth may at some period have been removed from this quarter, and that the hill originally may have been guarded by a continuous line of defence. On the eastern side, the bottom of the surrounding ditch is 35 feet below the summit of the rampart.

The north or lower hill rises to an average height of 63 feet above the brook. The nearly level space on the top measures on an average 200 by 120 feet, thus having an area of 2700 square yards, or upwards of half an acre, exclusive of the ground occupied by the rampart which runs along the northern and eastern sides. This defence is 60 feet broad at the widest part, its extreme height being 15 feet.

The ditch on the northern side of this hill is 27 feet below the top of the adjacent rampart, whilst the sloping side of the breastwork and ditch taken together is double that distance.

When the hills were occupied for defensive purposes, the ditches would possibly be filled with water to a considerable depth, but if so every trace of the retaining dams has disappeared. It may be remarked that this could not be done to any appreciable extent on the south side, on account of the small capacity of the ditch.

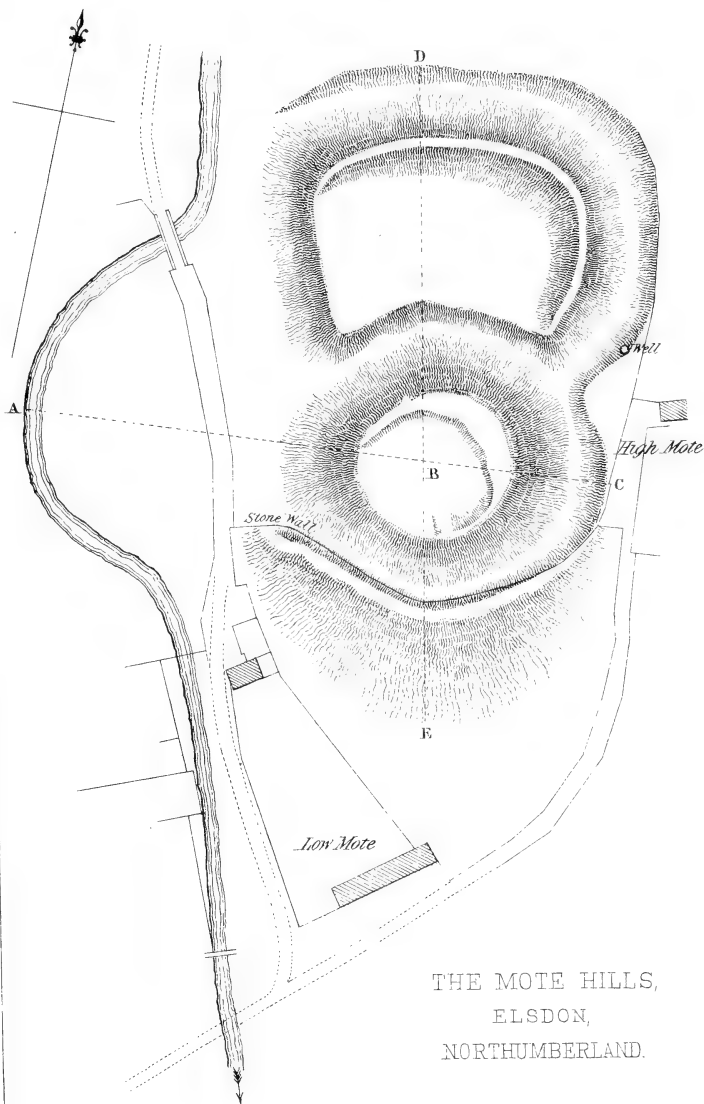
The surface of the northern hill, unlike that of its more aspiring neighbour, appears to have remained untouched. Its beautifully level top, and the fine unbroken, sweeping barrier by which it is protected, seem never to have been disturbed since the last detachment of weary labourers relinquished their tools on the completion of their stupendous, and probably long protracted work.

On looking carefully at the section DBE, the reader will be apt to draw a conclusion, that the top of the northern hill is very

near to what, previous to the formation of the ditches and embankments, must have been the natural surface of the ground. Let this supposed surface line be continued on the section, through the higher hill across the southern ditch where the artificial work ceases, and it will be found that there is fully 20 feet of the top of the hill above what appears to have been the natural surface of the ground. Hence unless diluvial action had thrown up a conical hill here, there must have been from twelve to fifteen thousand cubic yards of material brought from a distance, in order to raise the hill to its present height. This earth, it is believed, was taken out of the hollow in which the road from the High Mote House now goes down to Elsdon. Sand it is well known, is the principal component in both the hill and the cutting,* and Mr Matthew Hall the present owner of High Mote Estate, to which property the hill itself was formerly attached, has assured me that fragments of coal and limestone are found in the edges of the cutting, whilst particles of both substances have been observed by him in the sand composing the highest portion of the hill.

The construction of the Mote Hills at Elsdon has been universally ascribed to the ancient Britons; but the time of their erection, and their purposes, whether as places of defence or as temples of worship, are questions involved in impenetrable obscurity. It is even doubtful whether both hills belong to one period, for the regular, more highly finished, and less time worn appearance of the northern erection, may suggest the idea that before it was called into existence, its older neighbour might have witnessed revolutions almost innumerable of that deified object to which it has been thought it was originally dedicated. The general appearance of the southern hill is no doubt that of a defensive position, but there is no incongruity in supposing that at the same time it might be used for civil assemblies, for the promulgation of laws, for the administration of justice, and for the celebration of religious rites and ceremonies. What, then, was the nature of the adoration practised here? Doubtless it was the widely spread worship of that glorious luminary which confers such

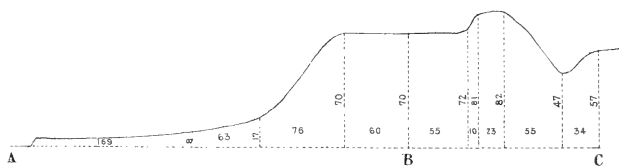
* Mr Hall of Low Angerton, formerly of the Mote, has informed the writer that about the year 1822, he and his brother dug a shaft in the higher hill to the depth of about seven yards, and bored two yards farther with an iron rod. So far as they went nothing but sand was reached.



Scale: 50 Yards to an Inch.

Thos Arkle, Sept^r 1848.

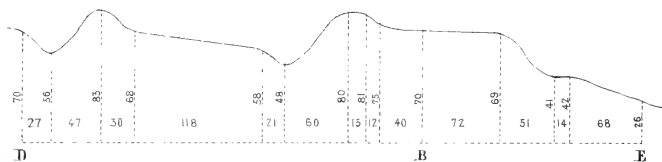




SECTION ON LINE A B C

Horizontal Scale 150 Feet to an Inch.

Vertical Scale 100 Feet to an Inch.



SECTION ON LINE D B E

THE MOTE HILLS. ELSDON, NORTHUMBERLAND.



inestimable benefits on mankind, and which a faith infinitely more exalted and sublime found it difficult to extinguish. We know little of sun worship, only we are informed that elevated positions were its most appropriate temples; and we can easily conceive that some such notion prevailed amongst a people who designated one of their highest mountains by a name which, in their admirably descriptive language, signified *the presence*. One relic of sun worship certainly came down to our own times, viz., the lighting of a bone-fire on Midsummer eve, which practice at Elsdon was discontinued only half a century ago. We need not be surprised at this observance when we find that so late as the time of Canute the Great (1017 to 1036) an Act was passed prohibiting the worship of the heavenly bodies.

Hutchinson, Mackenzie, Hodgson, and Bruce, all agree that the Romans occupied the Mote Hills; but Hodgson is the only historian who mentions Roman masonry as existing there, adding, however, that the hill was occupied for *occasional* purposes. The evidence of Roman occupation seems to rest solely on the fact of two fragments of stone, together forming one tablet, dedicated to Matunus, having been found in one of the hills. Boar's tusks, urns containing bone ashes, and bones of animals supposed to have been used in sacrifice, are too vague to be relied upon as proofs of occupation by any particular people.

There is a tradition that squared stones obtained from the hill were used in building the farm house at the High Mote. These stones do not seem to possess any of the distinguishing characteristics of Roman masonry; they appear rather to resemble the remains of some mediæval structure.

General Roy's conjecture that Elsdon was the first of a chain of Roman forts between Watling Street and its Eastern branch, the second having been on the Coquet behind Hepple, on a hill called Hetchester, carries with it less weight when it becomes known that Hetchester was a *British* encampment, and that a paved Roman road led from Bremenium on the Reed to Holystone on the Coquet, and thence by way of Callaly to Thrunton, where it joined the Eastern branch of the Watling Street. If there had been a succession of forts they would have been placed on this line of road.

Hodgson well observes that the term Mote Hill, as applied to the remarkable structure at Elsdon, is descriptive either of its form or of the use to which it was applied; but when it is

considered that so many hills throughout the country, not moated but simple in construction compared to the one here, bear the same appellation, we must conclude that the name is indicative of the circumstance that such places were in Saxon times used for the administration of justice, and that our Moot Halls are their legitimate successors. Under any circumstances, the situation of Elsdon renders it well adapted for the capital of an extensive, if not highly-populated district.

In 1281, the town was thought of sufficient importance to be granted the privilege of holding a weekly market and an annual fair. The Court Leet of the extensive Manor of Redesdale was held here till 1868, when this last vestige of departing baronial greatness ceased to exist.

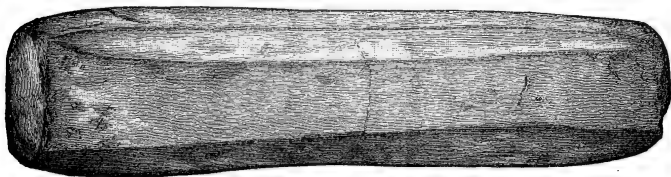
Note on Stations for Woodsia Ilvensis. By Mr ROBERT MATHISON, Innerleithen.

THE following observations I am in a position to offer regarding this rare and interesting fern. It seems to be its chief characteristic to prefer an altitude of about 2000 feet. It is to be found in several localities, in the ravines among the mountains, forming the boundary between the shires of Dumfries and Peebles. One of the habitats well known to me is in proximity to Loch Skene. There it grows on crumbling Silurian rocks having a southern aspect. It may also be interesting to know that in the immediate neighbourhood, we find the beautiful *Hymenophyllum Wilsonii*; also *Cystopteris fragilis*, *Botrychium Lunaria*, *Polypodium Phegopteris*, *Lycopodium Selago*, and *Selaginoides*. Another station of the *Woodsia* is the waterfall of Corriffren (Corrie fruan). The plants here have a western exposure, and grow upon the debris of highly laminated Silurian shales. There is another station of the *Woodsia* near Hartfell, wild, weird, and grand. Here the plants grow upon Silurian grits, with a western exposure, like the last. In all the stations the *Woodsias* shew evident signs of sparseness. I have visited these stations personally, and give the substance of my observations. I may also mention here that the *Asplenium septentrionale* is found in Peeblesshire rather abundantly.

*On a Polygonal Grinding Stone of Quartzite found on
Lamberton Moor.*

THIS Polygonal Grinding Stone of Quartzite was communicated by Major CAMPBELL RENTON, of Mordington, through Colonel DAVID MILNE-HOME, M.P., Royal Horse Guards, to the Society of Antiquaries of Scotland, and an account of it was printed in the "Proceedings" of the Society for 1881, which by permission, is here reproduced, along with the copy of the figure, the gift of the Society, at the instance of Colonel Milne Home.

It is $13\frac{1}{2}$ inches in length, 3 inches in breadth, and $2\frac{3}{4}$ inches in thickness, and was found in excavating a drain on Lamberton Moor, Berwickshire. It bears on one of its broader sides three grinding faces which have been worn to concave surfaces, and highly polished by use. The concavities of these surfaces are greatest towards the centre of the stone where the pressure of friction has been greatest; and towards the ends the unworn

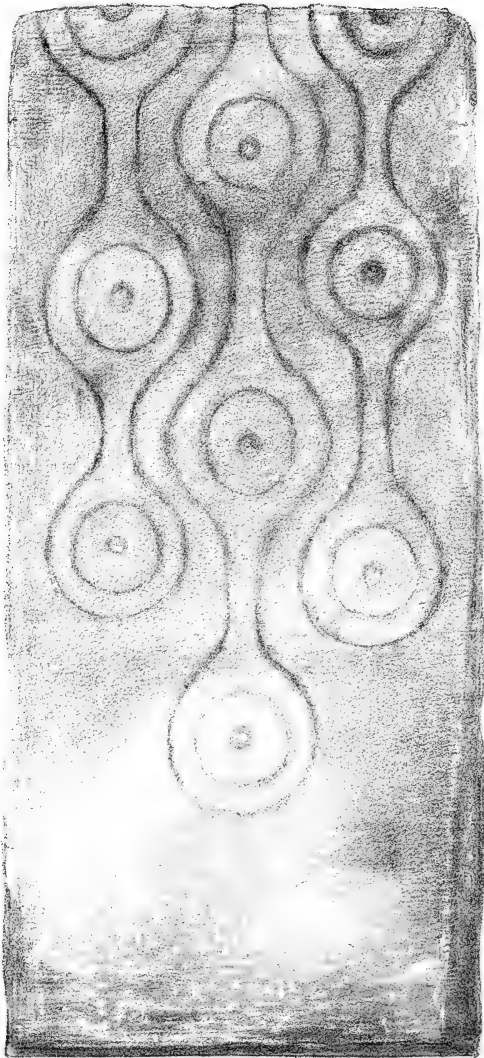


surface of the stone is convex instead of concave. On one of its narrower sides two similar grinding faces are found. On the opposite side there is but one grinding face, broader and deeper in the centre than the others. The broader side opposite to that first described has scarcely been used, and the surface is convex. The form and appearance of the implement will be more readily understood from the accompanying engraving. It is the only specimen of the kind in the collection. These polygonal grinding stones are rare, probably because their characteristics are not so obvious and striking as those of the implements they were employed to sharpen and polish. Hone-stones and whetstones are much more common than these large and massive *polissoirs*, which are of such size and solidity that they may have been used for giving the necessary grinding finish to the larger as well as to the smaller varieties of polished stone celts.

Mr John Evans, in his work on "The Ancient Stone Implements, Weapons, and Ornaments of Great Britain" (London 1872), after mentioning the fact that the grindstones on which stone celts were polished and sharpened were not like those of the present day, revolving discs against the periphery of which the implements to be polished or sharpened were rubbed, presents a summary of the evidence regarding them as follows:—

"Considering the numbers of polished implements that have been discovered in this country, it appears not a little remarkable that such slabs have not been more frequently noticed, though not improbably they have, from their simple character, for the most part escaped observation; and even if found, there is usually little, unless the circumstances of the discovery are peculiar, to connect them with any particular stage of civilization or period of antiquity. In Denmark and Sweden, however, these grinding stones, both of the flat and polygonal forms, are of comparatively frequent occurrence. Specimens are figured by Worsaae ('*Nordiske Oldsager*' Nos. 35 and 36) and were also given by Thomsen so long ago as 1832 ('*Tidskrift for Oldkyndighed*,' vol. i. pl. ii p. 423). He states that they have been found in Scandinavia in barrows and elsewhere in the ground with half finished stone celts lying with them, so that there can be no doubt as to the purpose for which they were intended" p. 235). Mr Evans then states that several of the grinding stones found in this country resemble those of polygonal form found in Denmark, being symmetrically shaped, and showing marks of use on all their faces. He figures one from Dorchester, now in the Christy collection, $9\frac{1}{4}$ inches long, which has both the faces and sides worn slightly concave as if from grinding convex surfaces such as the edges of celts, "though it is impossible to say with any degree of certainty that this was really the purpose to which it was applied" (pp. 238-9).





Robert Matheson, Del.

Scale of One Foot.

Gibb & Hay Lithographers.

SCULPTURED PILLAR FOUND AT INNERLEITHEN, 1871.

On a Sculptured Stone at Innerleithen. With a Plate.

THIS stone which has perhaps been the shaft of an ancient cross, is preserved by Mr Robert Mathison, builder, Innerleithen, and has been erected on a pedestal in his garden. Its character is sufficiently obvious from the figure in the Plate, which was drawn by Mr Mathison. It is an equi-sided quadrilateral column of a fine grained white sandstone, such as does not occur in the vicinity. The incised sculpturing is of Celtic design, being almost a repetition of what is called the "Spectacle Ornament," and is repeated on all the four sides. It is extremely interesting as being perhaps one of the few examples remaining of the former influence of the Columban or Kentigerian Church in the district; of which, it may be mentioned, there is another instance in the fragments of a sandstone Iona cross, which were turned up, when a new church was erected at Borthwick in Mid-Lothian. Mr Mathison supplies the following history of the stone:—"It was found in the foundation of the old Parish Church of Innerleithen, in 1871, during the process of its demolition. It formed part of the lowest course of mason work of the south side wall, and was near the position of the pulpit. In all my researches I have not been able to arrive at a satisfactory or conclusive opinion as to the quarry, or even the locality, from which the stone has been got. It is certainly beyond all doubt that it is not a stone native to this county.—This old church stood in the church-yard near to the present manse, which is about three-fourths of a mile from the centre of the burgh. About a quarter of a mile to the north of this old church once stood the parish church of older date. This church, like its successor, was demolished, and probably from it this old relic was brought. This reference is justified by the fact, that many fragments of old tomb-stones formed part of the structure last demolished.

"This church of oldest date, 'said to be dedicated to St. Calixtus is mentioned for the first time in authentic record in the reign of Malcolm the Maiden, about the year 1159, in connection with a very interesting circumstance. An illegitimate son of the monarch, who derived his surname from his effeminate countenance, had been hunting in the neighbourhood of Innerleithen, and was attempting to cross the Tweed on his return home to the castle of Traquair, where he was at the time residing. The river being in high flood, he was carried down by the stream and was

drowned. His body was recovered and taken out of the water near the foot of the Leithen, and immediately opposite a steep hill called the Caddon-bank. It was conveyed by the country folks to the church of Innerleithen, and lay there the whole of the next night. In return for this act of kindness and respect the King granted the church of Innerleithen to the monks of Kelso, and bestowed upon it, the rights and privileges of sanctuary.”

In granting this privilege to “Inverlethan,” Malcolm IV. ordains, “that the said church in which my son’s body rested the first night after his decease, shall have a right of sanctuary in all its territory, as fully as Wedale or Tynningham; and that none dare to violate its peace ‘and mine’ on pain of forfeiture of life and limb.” “Ut tantum refugium habeat in omni territorio suo; quantum habet Wedale aut tynningham, et ne aliquis ita sit temerarius, ut pacem predictę ecclesię et meam super vitam et membra sua, audeat violare.” *Liber de Calchou, Chart. No. 21. p. 23).*

“The most celebrated, and probably the most ancient sanctuary [in the south of Scotland]”, says Mr Cosmo Innes, “was that of the church of Wedale, a parish which is now called by the name of its village, ‘the Stow.’ There is a very ancient tradition, that King Arthur brought with him from Jerusalem an image of the Virgin, ‘fragments of which,’ says a writer of the 11th century, in an annotation on a MS. of Nennius, ‘are still preserved in Wedale in great veneration.’ ‘Of the sanctuary of Tynningham, thus mentioned as of almost equal celebrity with Wedale, we have but little further information.’” (Preface to *Liber de Calchou*, pp. xxi. xxii). The Scotch law of sanctuary is fully described in this Preface. ‘The King’s peace’ alluded to in the Charter, “was a privilege attached to the sovereign’s court and castle, but which he could confer on other places and persons, and which at once raised greatly the penalty of misdeeds committed in regard to them.” (*Ib.* p. xxiii).

In the year 1144, when David I. granted the church of Lesmahago as a cell to Kelso, he conferred upon it the secular privilege of sanctuary in these terms: “Whoso, for escaping peril of life or limb, flee to the said cell, to come within the four crosses that stand around it, I grant them my firm peace.” (*Ib.* p. xxii) The “territory” of Innerleithen would have similar crosses. Was the sculptured stone now under consideration, the shaft of

one of them? As already hinted at it was possibly of still older type.

The portion of the shaft that remains is 2 feet 9 inches in height, fifteen inches on the face, and twelve inches in thickness.

J. H.

On a Trout of great age. By Mr JAMES WOOD, Galashiels.

Not having seen in the Club's Proceedings any notice relative to the age to which fishes attain, I think the following may not be without interest to the members.

In the year 1835, James Crosbie, son of the late Thomas Crosbie, letter carrier, captured a trout in the Leader, and put it into a well belonging to the late James Thin, weaver, West End, Earlstoun. The trout when put into the well was of an ordinary size, and might weigh from five to six ounces, but as it took quite kindly to its altered circumstances, it gradually increased in bulk, until in course of time it attained to the dimensions of a fish of a pound and a half in weight, which seemed to be the full extent of its natural development, as for many years afterwards it presented no perceptible change whatever. It was observed to get darker in colour, which might have been due to its shaded position. The well was cleared out every year, and during this operation the trout was carefully transferred to a tub of water. In the latter years of its life, when taken out for this purpose, its head seemed to be assuming abnormal proportions. This, however, was ultimately found not to be the case, the fact being that its body was gradually getting more and more emaciated, until in 1869, to the grief of many people in the neighbourhood, it was taken out dead, its body wasted away to a mere skeleton. During all the thirty-four years it was in the well, its wants were carefully attended to, as the women, when they went to draw a pitcher of water, generally took a few crumbs of bread and threw down, and children going to take a peep at their favourite trout, seldom did so, empty handed. From the emaciated condition of the fish when taken out of the well, it may safely be concluded that its death was due to natural causes alone, and assuming from its size when put in, that its age may have been five or six years old, this would make the whole life of the trout to be close on forty years. Whether it would have attained that age, or beyond it, in its native stream, exposed to many enemies, is matter of conjecture.

Notes, with Measurements, of some of the Coniferæ at Rowchester, Berwickshire, 20th September, 1881. By Mr. PETER LONEY, Marchmont.

1. *ARAUCARIA IMBRICATA*—

Height . . . 34 feet.
Circumference at 1 foot, 4 feet.
Do. 3 feet, 3 ,, 3 inches.
Do. 5 ,, 3 ,,

This tree is in luxuriant health. It has 20 whorls of branches. There are seven cones on it, each about 19 inches in circumference; two of them resemble a Pine Apple, with the branch rising from their apex; the other five are sessile, or seated on the branches. This is the second year of the cones, and I have no doubt they will ripen seed.

2. *ARAUCARIA IMBRICATA*—

Height . . . 24½ feet.
Circumference at 1 foot, 3 ,, 8 inches.
Do: 3 feet, 2 ,, 11 ,,
Do. 5 ,, 2 ,, 11 ,,

This tree is growing vigorously.

3. *WELLINGTONIA GIGANTEA*—

Height . . . 37 feet.
Circumference at 1 foot, 8 ,,
Do. 3 feet, 6 ,, 1 inch.
Do. 5 ,, 2 ,, 2 inches.

This tree is growing vigorously, and bears a heavy crop of cones, the seeds in which are nearly ripe.

4. *PINUS EXCELSA*—

Height . . . 31 feet, 6 inches.
Circumference at 1 foot, 4 ,, 5 ,,
Do. 3 feet, 3 ,, 10 ,,
Do. 5 ,, 3 ,, 4 ,,

This tree has suffered a good deal by the severe frosts of the past two winters; it has several leading shoots, characteristic of it in this country. There are a number of cones about 9 inches long, which promise to ripen seed if we have no early autumn frosts.

5. *TAXODIUM SEMPERVIRENS*—

Height . . . 31 feet.
Circumference at 1 foot, 8 ,, 2 inches.

At 2 feet high this tree branches into two trunks, each at 3 feet is 5 feet 2 inches in circumference; it is growing vigorously, and there are no signs of the past winters observable.

6. *PICEA PINSAPO*—

Height . . . 29 feet.
Circumference at 1 foot, 2 feet 10 inches.
Do. 3 feet, 2 ,, 2 ,,
Do. 5 ,, 2 ,, 0 ,,

This is a very healthy, well-proportioned tree.

7. *CRYPTOMERIA JAPONICA*—

Height . . .	27 feet 8 inches.
Circumference at 1 foot, 3	„ 4 „
Do. 3 feet, 2	„ 11 „
Do. 5 „ 2	„ 8 „

A very healthy, vigorous tree.

8. *CUPRESSUS TORULOSA*—

Height . . .	38 feet.
Circumference at 1 foot, 4	„
Do. 3 feet, 3	„ 8 inches.
Do. 5 „ 3	„ 0 „

Growing vigorously.

9. *PICEA PONDEROSA*—

Height . . .	24 feet.
Circumference at 1 foot, 3	„ 10 inches.
Do. 3 feet, 2	„ 9 „
Do. 5 „ 2	„ 4½ „

10. *ABIES CEPHALONICA*—

Height . . .	30 feet.
Circumference at 1 foot, 3 feet 7 inches.	
Do. 3 feet, 3	„ 1 „
Do. 5 „ 3	„ 5 „

A healthy tree, clothed to the ground with branches, and thoroughly hardy.

11. *PINUS STROBUS*, *NANA*—Height about 7 feet, with several leaders; a very striking plant, from the variegated appearance of its foliage and shining bark.

12. *ABIES DOUGLASI*—30 feet high.

13. *ABIES ORIENTALIS*—28 feet high; a very fine specimen, but over-shadowed with deciduous trees.

These fine specimens of *Coniferæ* were planted by the present proprietor, R. H. Broughton, Esq., about 22 years ago, who is deservedly proud of them. The cone-bearing *Araucaria* is decidedly rare in Scotland, and goes far to prove that *Araucaria* is not absolutely dioecious; probably far from it.

Record of Migration and Occurrence of Birds on the Borders in the order of their dates, for 1881. By JAMES HARDY.

For furnishing the particulars in addition to my own observations of the past year on the migration of Birds, I am indebted to the following, whose contributions are chiefly indicated by their initials, viz.: Mr John Aitchison, Belford; Rev. J. F. Bigge, Stamfordham; Mr George Bolam, Berwick; Mr Andrew Brotherston, Kelso; Mr James Mein, Lamberton; Mr Robert Renton, Fans; and also to Dr. Charles Stuart and others, whose names are given in full.

WOOD-PIGEON.—Mr John Aitchison writes from Belford: "The first great migration of 1881, took place in the early part of the year, namely, from the 6th to the 20th of January. It consisted of large flocks of Swans, Geese, Ducks, and Wood-pigeons. The Wood-pigeons were exceedingly abundant; and some of the flocks must have contained thousands of birds. In the neighbourhood of Belford, whole fields, many acres in extent, were literally covered for several days by these immense flocks. Many of the birds were, no doubt, from the north of Scotland, but vast numbers must have come across the sea from the more northern parts of continental Europe. They suffered terribly in the snow-storm in January. Scores of them were found starved to death in the fields, and fowlers shot them down, not by scores, but by hundreds in a day. They visited in flocks the gardens of the Blue Bell Inn, the stack-yard and cattle folds; and the back-yards and open ash-pits in other parts of the town, were daily assailed by flocks of from a dozen to twenty and thirty or more individuals. They nearly all disappeared after about the 24th January."—A migration of Wood-pigeons was observed Oct. 30th, 1880, see "Proceedings," p. 406. It was at the period referred to by Mr Aitchison that Wood-pigeons during the snow-storm stripped the leaves off most of the Swedes in this neighbourhood and in East Lothian. A gamekeeper who shot some of them here, said they were mere skeletons. Some were so weak that they staggered in their flight, although not wounded. They have been very scarce on the coast-farms during the summer and autumn. No flocks visited the corn-fields at the ripening period, a source of constant annoyance. Only a few pairs remain in the woods.—On Dec. 6th, 1881, Dr. Stuart, at Whiterig, near Ayton, saw vast flocks of Wood-pigeons of a darker hue than the birds of our country; evidently foreigners. The pure white bird noticed last year as being in the Pease dean was shot by one of the gamekeepers.

WILD SWANS (See WOOD-PIGEON).—Mr Aitchison goes on to note of date Jan. 26th, that "several flocks of Swans had been seen at Fenham Flats recently, and some individuals were shot. A flock of 14 Swans visited Belford on Jan. 27th. They alighted on a pond in front of Belford Hall, where they remained for nearly two hours, then took their departure a little before dusk. Another flock of seven was seen at the same place on Feb. 4th."—May 28th. Three were observed on the Tweed, between the Quay and the Pier at Berwick. They flew off in the direction of the Farne Islands. (*Ber. News*). Oct. 7th, a family company of Swans appeared at Fenham.—*J. A*—Oct. 25th, Mr Brotherston received a Hooper from Greenlaw-walls near Norham.

LAPWING: *Spring Migration.*—March 7th, snow disappearing; 18 Lapwings appeared on the leas. Same day. Lapwings and Golden Plovers came in a great band to Penmanshiel. March 11th, fresh, 31 birds flying towards the sea. March 16th, becoming scattered. March 19th, from 20 to 30 seen; wind high. March 20th, several seen at their breeding places near Cockburnspath; where they continued on the 27th. March 20th, a large flock at lea fields, Oldcambus, and on 28th about 20 crossing the country in quest of ploughed ground. April 3rd to 12th, a considerable number of parties not yet dispersed; and this continued till April 14th and 16th. The companies were long in breaking up this ungenial spring; several were still seen on the 23rd. On April 20th, the Lammmermoor Lapwings and Golden Plovers were

driven down by cold piercing winds, to the low fields near Skateraw, East Lothian.—Feb. 27th, in considerable flocks at Edington Hill.—*Dr. Stuart.*—March 1st, a considerable flock at Roxburgh Barns, along with Golden Plovers, before severe weather, which sent them off again to the sea-side.—*A. B.*—March 8th, Lapwings appeared at Fans, near Earlston: had eggs in April.—*R. R.*—*Autumn Migration.*—Sept. 4th, the flocks of Lapwings were fewer this year among turnip fields on the coast, owing to there not being any caterpillars (although full of Aphides); a few parties of them observed in the Merse. On Sept. 6th, they came down in great numbers to the rocky shore at Oldcambus. Oct. 18th, very large numbers in the fields at Rowchester near Greenlaw. They did not leave Fans till November. Oct. 26th, they returned in considerable numbers to the leas at Penmanshiel, their summer residence. Nov. 18th, bad weather, numerous at Cockburnspath. Nov. 22nd and 23rd, passing the night in the inland fields, and the day at the sea-side. Dec. 28th, Lapwings had left; were near Dunbar 10th Jan., 1882. These and some that follow are instances of local migration dependent on the necessities of incubation, on weather, and on food.

CURLEW: *Spring.*—March 12th, fine day; about 20 Curlews on the coast. March 15th, began to venture inland; 9 or 10 at the sea side; only one left on March 21st. March 28th, 18 Curlews at the coast; on March 30th and 31st, April 4th and 5th, there were only two or three left; April 12th, there were none. April 13th and 23rd, the Curlews were on the moors. May 11th and 17th, only a single bird frequented the shores. March 19th, appeared at Fans; had eggs, April 17th.—*R. R.* March 15th, appeared at Stamfordham.—*J. F. B.* *Autumn.*—July 2nd, 4 Curlews arrived on the coast; and on the 16th more; on the 22nd there were 8, and then 5 visible. They were scarce all the season. Aug. 4th, about 30 in a flock. Aug. 22nd, the Lammermoor Curlews in East Lothian were circulating between the hills and the coast above Innerwick. Sept. 1st, at Scremerston, near Berwick, the Curlews and Redshanks had scarcely left the hills for the coast.—*A. H. Evans.* Sept 13th, there were 15 Curlews on the coast here; Nov. 15th, there were none; Nov. 24th, only one; Dec. 16th, 10; a few continued till Dec. 28th.

GOLDEN PLOVER (See LAPWING and CURLEW).—March 10th, appeared inland at Fans.—*R. R.* March 1st, at Roxburgh Barns.—*A. B.*

REDSHANK: *Spring.*—March 31st, last seen on the coast, and then only three. *Autumn.*—July 22nd, 8 Redshanks arrived. Aug. 4th, a few on the coast, where they continued but the numbers were very scarce during the winter.

HERON: *Spring.*—Feb. 24th, Herons left, three only remained till that date. *Autumn.*—May 12th, one returned to the shore; July 22nd, two old Herons returned for the first time. Sept. 1st, 8 Herons seen. The sea-coast salmon fishery interferes with their haunts. Oct. 9th, 11 Herons present; continued till Dec. 28th.

WILD-GEESE: *Spring.*—March 7th, came in great numbers to the moors at Penmanshiel and continued till March 31st.—Jan. 5th, in a thaw, about 60 seen flying from N. to S. near Earlston; one left behind seen Jan 19th.—*R. R.* For the great arrival of Wild-Geese in the Belford district see **WOOD-PIGEON.** Mr Aitchison recorded in his Note Book, of date Jan. 26th, that "Fenham Flats has, during the last two weeks, been visited by immense

flocks of Brent Geese, such as have not been observed there for many years. The low-lying slakes in many places have been entirely covered with them, and large captures have been made. Bernacle Geese have also been very abundant, and so has the common Bean species." "On Feb. 26th to March 3rd, Fenham Flats was again visited by extensive flocks of Wild-Geese. They stayed over a week; but were not seen after about the 8th of March." *Autumn*.—Dec. 15th, a flock of 40 came to Penmanshiel; Dec. 19th, a considerable flock at Cockburnspath.—Oct. 16th, a small flock of Brent Geese visited Fenham, opposite Holy Island; and a second and rather larger flock appeared at the same place on Dec. 13th; others have been seen since, but in very limited numbers.—*J. A.* Wild Geese were seen at Berwick in the end of August and beginning of September (early); Brent Geese appeared on 25th October.—*G. B.* Feb. 4th, an EGYPTIAN GOOSE shot at Howburn, Northumberland.—*A. B.*

SKUAS.—Flocks of Skuas—chiefly Pomarine Skuas—were observed at Bamborough and other parts of the coast, on Feb. 17th, 19th, and 20th.—*J. A.* About the middle of September, Skuas of various kinds were very numerous a little way out to sea. On the 17th of that month, I watched five or six of them off the shore at Holy Island for some time. They were Richardson's Skua, and were chasing a flock of Terns that were fishing a quarter of a mile to sea.—*G. B.*

CORMORANT: *Spring*.—March 15th and 30th, last seen. The salmon fishery interferes with their favourite rocks and fishing ground. *Autumn*.—July 30th, first Cormorant arrived. On removal of salmon nets, Sept. 15th, three took their station on the rock named from them, "The Scart Rock." They have been scarce during the winter.

WILD DUCK OR MALLARD: *Spring*.—April 5th, ceased to frequent the sea; April 12th, in inland ponds.—At Fenham Flats, in January, the Mallard was very plentiful; but most of the other species were comparatively scarce.—*J. A.* *Autumn*.—Oct. 9th and 12th, Ducks re-appeared in the sea, in small numbers; there were only 4 on Nov. 15th, and then they disappeared. They have been equally scarce inland.—Wild Ducks have been very scarce at Fenham this fall.—*J. A.*

EIDER-DUCK. Local movements.—March 15th, 13 Eider-Ducks in a pack off the coast, 7 males and 6 females; on March 13th, there were 20 in a body at Siccar Point, 8 of them males. March 31st and April 1st, 10 Eiders; April 4th, 17 Eiders; April 9th, 11 or 12; April 15th, 8, the sexes being equal; April 27th a pair of Eiders. Not seen again till Spring, 1882.—Mr Brothers-ton received to stuff, Jan. 22nd, March 10th, and Nov. 25th, Eiders from the neighbourhood of Berwick. On Sept. 17th, Mr Bolam saw hundreds of Eider Ducks all along the rocky shore of Holy Island; some in small parties, others in very large flocks.

GOOSANDER.—March 2nd, Goosander on the Teviot. April 25th, saw two on the Tweed near Floors.—*A. B.*

CRESTED GREBE.—April 29th, left the coast, having been present in considerable numbers all winter, probably mixed with other species, as the size varied; they did not return in the autumn; only two or three birds were seen in spring, 1882.—Sept. 30th, one from Teviot, near Roxburgh; stomach as usual filled with feathers.—*A. B.*

COOT.—March 7th, returned to an inland pond from and to which they are regular migrants; pair of Wild Ducks arrived with them; Oct. 28th left, and the DABCHICKS about the same period; and another species of GREBE arrived and replaced them. When the Coots are intercepted in their autumn journey they fight vigorously and bite their opponent, and will not be gainsaid. There are Coots also in a pond at Dowlaw; and at Fairneyside. At Fairneyside the Coots before the frosts of winter, 1880-1, betook themselves to the burn that passes through the dam. A DABCHICK at that period attached itself to the tame ducks, and came daily to the door to be fed with them.

WATER-HEN.—March 10th, returned to its favourite pond: but the frost and snow prevented its stay; and it did not renew its visit till April 14th, to settle.

PIED WAGTAIL: *Spring*.—March 16th, good day, first Wagtail; on the 17th two were present, being a breeding locality. March 24th, two appeared at Penmanshiel, but left. April 1st, two at the first locality, walking on the ice of a pond. April 3rd, a pair at Pease Bridge; April 9th, 11th, 12th, and 28th, others seen in a variety of places; the last noted arrivals were May 5th and 11th. A specimen of *Motacilla alba* on stones in a burn, May 3rd; engaged in search of water insects; not again seen.—April 11th, first Wagtail at Fairneyside near Ayton.—*A. Leitch*. March 19th, at Fans, Earlstoun.—*R. R.* March 7th, at Stamfordham.—*J. F. B.* April 24th, at Shawdon.—*James Thomson*. *Autumn*.—Aug. 16th, no Wagtails visible. Aug. 30, Pied Wagtails at Ednam. Sept. 20th, last for the season seen at Innerleithen. Nesting places observed at the middle part of Edmond's dean; at Heriot water above Stockbridge; and on the Water Eye at Butterdean Mill; at Renton and Horsley; and Dryburn and Saltpanhall, E. L.

GREY WAGTAIL.—May 18th, at Redheugh water-fall a female had just landed; it flew northwards by the coast line. May 23rd, had just arrived at Biel burn, East Lothian. In general were very scarce this year. May 18th only one Grey Wagtail on the Whitadder below Blanterne, which is a favourite resort, while there were several of the Pied species. Dr. Stuart remarks that no Grey Wagtails remained in the vicinity of the Whitadder to winter in the autumn of 1881-2. Absent this year in Pease burn, Dowlaw burn, Rigg-dean, and Water Eye above Grant's House; present at Dunglass burn.

GOLD CREST.—March 27th, a single bird in a hedge. No Gold-crests or CREEPERS, and rarely any WRENS were seen during the summer of 1881. Dec. 29th, a single Gold-crest on Spruce firs in the Pease-dean woods; where a pair was visible in March, 1882.

MOOR-PIPIT: *Spring*.—March 30th, from 10 to 15 arrived on the coast at Redheugh, where among young grass, they were springing at flies; calm and frosty. April 16th and 23rd, there were two or three on the moors. May 9th they were assembled in great numbers on Coldingham moor, where at one place I counted from 20 to 30 pairs. It was a good clear day. They were mostly perched on the top of heather and furze bushes. There was very little song among them, very few mounting into the air. *Autumn*.—July 20th, a considerable number of young birds from the hills, frequented the coast near Siccar point. Aug. 22nd, Pipits had deserted the Lammermoors above Woodhall Woods, E. L. Aug. 25th, Sept. 5th, 6th, 7th, numerous

Pipits in straggling companies frequented the turnip fields and bean stubbles, and the sea-banks; most of them had left on Sept. 17th; a few only remaining on 24th. On Sept. 26th, I observed that a few only were still frequenting Meikle Hill, Selkirkshire.

TREE-PIBIT OR TIT-LARK.—May 6th, one newly arrived at Oldcambus, flew wildly, contrary to the wind; very windy from W. May 7th, one at Pease Bridge and another at the top of Aikieside, newly arrived.—May 9th, a newly arrived bird at Dowlaw-dean. These appeared to have come singly. Bred this year on the Railway-side north of the Tunnel; also in Bowshiel-dean.

MISSAL-THRUSH, SONG THRUSH, ETC.—March 11th, wind N.W., fresh, a band of 10 Missals on this day, and 5 on the 10th, passing about 10 a.m. going northwards; the local birds were singing on both days. The Missals were fewer than usual; the Song Thrushes had to be sought after to discover if there were any left; one was heard March 9th, another April 16th; none seen in Pease dean woods, April 20th. On Sept. 26th, a flock of 6, and then another of 26 Missals were feeding on Meikle Hill, Galashiels.—Oct. 24th, a considerable number in the fields at Penmanshiel.—Mr Aitchison mentions that Missals have been more than ordinary plentiful in the autumn about Belford.—Winter 1881-2 has almost exterminated the Common Thrush near Chirnside.—*Dr Stuart*. Hardly a Thrush has been seen or heard this spring (1881) at Stamfordham, but there are fair numbers of Blackbirds.—*Rev. J. F. Bigge*. At Meldon Park, near Morpeth, the Blackbird is much more plentiful this year than last, but Thrushes are scarce, as well as Starlings.—*J. Finlay*, Nov. 14th, 1881.

RING-OUZEL.—May 10th, nest and four eggs at Howpasley, near Hawick.—*A. Brotherston*. It has not re-appeared in this vicinity this year any more than last.—*J. H.* June 3rd, 1880, one on the Craigs near Crichness in the Lammermoors.—*J. Logan Mack*. In middle of July, seen at the foot of the Lammerlaw.—*A. Leitch*.

BLACK-HEADED GULL.—There were a few left at the sea-side in Jan. 1881. June 12th, two returned from the inland district; July 2nd, one; July 16th, more; July 30th, more; July 30th, following the ploughs; August 1st, upwards of a hundred in a flock on the shore, and flying about the fields in the evening. Nov. 23rd, several were still on the coast; Dec. 16th and 22nd one seen; Jan. 3rd, 1882, about 6 remain, several were still on the coast; Dec. 16th and 22nd, one seen; Jan. 3rd, 1882, about 6 remain, which were flying towards the inland country. There appears to be generally a residue left during the winter.

SNOW-BUNTING: *Spring*.—Jan. 7th, three or four in a great storm of snow. Feb. 19th, two heard. March 28th, the main body left Penmanshiel; one remaining behind April 1st. April 12th, one seen a little inland.—Feb. 12th, a large flock of Snow-Buntings was observed at Belford, going in a southerly direction; and on the 18th another considerable flock, all making their way southwards.—*J. A.* *Autumn*.—Oct. 31st, at Oldcambus Townhead before a snow-storm; Nov. 14th, seen at Bowshiel; Nov. 26th a great flock on clover leas at Penmanshiel.—Nov. 5th, at Lamberton.—*J. M.* Oct. 9th, a small flock in a field near Belford; none subsequently.—*J. A.*

BRAMBLING.—Jan. 15th and 19th, one and then two Bramblings among Chaffinches and Grey Linnets in stackyard during a snow-storm.—Jan. 10th, appeared in a hard frost during a snow-storm, at Fans near Earlston.—*R. R.* Feb. 4th, at East Blanterne.—*Dr. Stuart.*

WHEAT-EAR: *Spring*.—April 11th, wind S.E., a pair of Wheat-ears male and female, arrived in a fallow-field: continued on the 12th. April 14th, four were seen more inland, and had departed on 15th. On 13th, one a mile inland. Very scarce this spring. May 3rd, three fresh birds on the coast, and three in a sheltered dean; day cold, after rain. May 5th, one on the coast. May 9th, three or four on moor edges at Dowlaw; probably breed there. May 19th, more arrived with a *rush* of Flycatchers, &c.; wind S.W. and showery; making northwards in the afternoon; left next day. May 23rd, straggling birds at Linnhead and Cove, near Cockburnspath. May 24th, another straggling Wheat-ear seen here; and on the 25th, others near Skate-row, East Lothian. They have dropped in irregularly this year, and in scattered parties. March 29th, at Sunnyside, Chirnside Crofts; March 31st, at Allanton.—*Dr. Stuart.* March 28th, one at Doddington Moor, Northd., where I was told it had been for some days.—*G.B.* April 3rd, at Belford.—*J. A.* April 5th, at Lamberton.—*J. M.* April 12th, at Stamfordham.—*J. F. B.* *Autumn*.—July 20th, a young Wheat-ear at coast, and again Aug. 8th; Aug. 27th, more; Sept. 2nd and 3rd. still present.—Sept. 1st, at Scremerston.—*Mr Evans.* Sept. 12th, near Belford, small flocks of Wheat-ears were observed flying south: and on Sept. 23rd, two small companies were seen; the last observed in the district.—*J. A.* Nesting places were observed in the upper part of Edmonds dean; and on the coast north from Bilsdean, East Lothian.

STONE-CHAT.—April 7th, at Belford.—*J. A.* May 9th, I observed it at two nesting stations, one on Piperton Hill, or Earnslaw, two males: and again at the head of Dowlaw-dean. Another of its resorts is Ewieside. After the great storm of Oct. 14th, a pair (Oct. 26th) took refuge in the dean at Oldcambus, where they continued for a time.

WHIN-CHAT.—May 7th, cold wind from the north a pair of Whin-chats, male and female, on a pasture field in the shelter, along with two Wheat-ears. May 19th, latest arrivals along with Flycatchers, etc.; left next day: going north coast ways in the afternoon.—April 9th, at Belford.—*J. A.* Breeding stations were noticed in the most secluded part of Edmonds dean, and on Ecklaw Edge; and on the river Eye below Blackburn Mill; and at Butterdean old Mill. and on Berryhaugh, on Brockholes farm.

CHIFF-CHAFF.—April 2nd, at Belford.—*J. A.* April 27th, at Chirnside Bridge.—*Dr. Stuart.* Spreading in the valley of the Eye.—*A. H. Evans.*

WILLOW-WREN: *Spring*.—April 17th, fine, clear, and sunny day, *Sylvia trochilus* at Pease Bridge; and again heard it on 24th, but none in the hedges. April 23rd, cold wind; three eagerly in search of food in a natural oak wood at Oldcambus, looking out to the sea, to which many of the arrivals first resort; other two more inland; the first noticed left on the 27th, and there were none on the 28th, when after rain, the weather was milder. April 30th, mild day; Willow-wrens pretty extensively diffused up the Pease-dean; pairing. May 3rd and 5th, cold, one seen, none in the hedges. May 6th, several at the locality mentioned April 23rd, and in the hedges, but they were shifting

northwards. May 7th, continue in Pease-dean; 8th, warm, in most of the hedges. May 9th, in thickets of birch and sallow in Penmanshiel and Dowlaw mosses, most bleak situations. May 19th, latest arrivals with the Spotted Flycatcher; these left on the 20th.—April 10th, first seen at Belford. Mr John Aitchison remarks, "I have observed that this little warbler returns more regularly to this district, than almost any other bird with which I am acquainted." April 14th, arrived at Berwick.—*G. B. Autumn.*—July 23rd, collections of young Willow-wrens on furzy banks on the borders of bean-fields, and also frequenting the beans. This was a preparation for departure. Aug. 16th, Willow-wrens had deserted the furze bushes and hedges some-time before this date. There were none on the 20th. On the 21st there was one at Stockbridge. Aug. 22nd, they were still in Woodhall woods, E. L. Aug. 25th, there was one here. Aug. 30th, none seen at Ednam, nor in the woods and hedges near Kelso. At Chirnside, Dr. Stuart remarks. "Summer visitors all left early. I saw no Willow-wrens, White-throats, or Red-starts, after August." At Berwick, it left in the end of September, after the 29th, after which day it was singing lustily in the garden.—*G. B.* At Belford a company of Willow-wrens was noticed on Sept. 17th, and were the last of the species noted in that district.—*J. A.*

GARDEN-WARBLER.—April 20th, first heard and afterwards seen at Belford.—*J. A.*

SWALLOWS: SAND-MARTIN.—April 12th and 14th, at Dunse; did not appear at Oldcambus till May 7th. April 19th, at Chirnside Bridge.—*Dr. Stuart.* April 15th, near Belford.—*J. A.* April 12th, at Berwick. Breeding places observed; near Redheugh; on the coast at Billsdean, in the cliffs near Salt-pan-hall; on the Whitadder at East Blannerne; on the Eye, below Quixwood, and near Butterdean. scattered colonies; sand-pit at Horsley road; on Heriot water, below Stockbridge; and also above the Towerwood; quarry at Paddock-Cleugh. **HOUSE-MARTIN.** *Spring.*—April 28th, at Penmanshiel but left. May 5th, Swallows and Martins, 2 pairs of the first, and 5 or 6 birds of the latter, revisiting the cliffs in the shelter; wind W., cold and unpleasant. May 7th, mixed with Swallows and Sand-Martins near the coast, flying northwards, in the face of the wind; but perhaps a local assemblage. May 8th, Martins inland. About 10 birds at the "Swallow Craig," an old resort, on the coast. May 10th and 11th and 14th, none on the coast. May 13th, several on the Whitadder at Edrom. May 17th, rainy weather; a considerable number of Martins mixed with Sand-Martins and Swallows at the coast, and a pair of Swifts. May 20th, no Martins at the coast. May 21st, a numerous band of Martins on the coast at Siccar bay, taking up a new residence under hanging rocks facing the east. May 24th and 27th, they were numerous as bees at this new station, and their old localities which are at no great distance to the north. At some of the farmsteadings inland, they were more numerous than usual, and could scarcely be kept from settling in the windows, where not desired. July 3rd, very numerous at Dunbar, over the town, during a gentle rain.—April 20th, appeared at Belford.—*J. A. Autumn.*—Sept 1st, the Martins at Siccar cavern had had their nests knocked down by boys, but the young had escaped; on this day they were inducing the young to fly. They had left the coast about the 11th. A pair continued to linger at an inland station till their young was reared,

leaving Oct. 2nd. Sept. 29th, they continued at Kelso. New locality at Hawksheugh below Linnhead; continue to frequent the cliffs near the Cove Shore, and further north. SWALLOW: *Spring*.—April 20th, arrived at East Linton, three days behind the average time (*Scotsman*). April 25th, wind cold and piercing, a single Swallow passed northwards along the coast, in the face of the wind. May 5th, 6th, and 7th, Swallows and Martins present, in the evening of 7th came to settle, and on May 9th a pair fixed themselves at an adjacent farm. Swallows were again noted on the 11th and 12th, and on May 21st, 4 had finally settled here. April 20th, Swallows arrived at Fairneyside; for some 20 years there, they have regularly appeared between the 21st and 29th of April.—*A. Leitch*. April 21th arrived at Dunse. April 26th Swallows at Chirnside.—*Dr. Stuart*. At Woodside, Kelso appeared April 20th, but departed and were not again seen till 5th May.—*Dr Charles Douglas*. April 29th, appeared at Kelso, but did not arrive at Marchmont, till May 18th.—*P. Loney*. May 7th, at Fans.—*R. R.* May 4th at Lamberton.—*J.M.* At Berwick, Swallows arrived before the 29th April.—*G.B.* April 17th, at Stamfordham.—*J.F.B.* April 20th, Chimney Swallow and House Martin at Belford. Mr Aitchison remarks that Swallows at Belford have been less plentiful than they have been during the last three years. April 17th, arrived at Shawdon.—*J. Thomson*.—April 29th, at Meldon Park, Morpeth. Sometimes they arrive a week earlier at Morpeth, than at Meldon Park.—*J. Finlay*. *Autumn*.—Swallows were present here on Sept. 13th. but had left on the 15th. Sept 26th, they were seen at Reston and St. Boswells, but none remained in the Galashiels district. At Chirnside, nearly all except young ones, had left before the 18th, but on the 26th. a nest of young Swallows remained.—*Dr. Stuart*. Sept. 15th, left Belford, Bowmont-water.—*Dr. Robson Scott*. Sept. 24th, last seen at Woodside, Kelso.—*Dr. Charles Douglas*. Sept. 20th, at Belford, Swallows left.—*J. A.* At Fans, a pair were sitting on eggs, Sept. 23rd, but the nest was knocked down; and they left Sept. 27th. I saw a single Swallow on the 9th November.—*R. R.* At Gordon, in the same vicinity, Swallows left about the 9th Oct.; but there were a few on the wing a few days after. They commonly leave on the last week in September.—(*Corr.*) Mr Peter Loney furnishes me with the following data from Marchmont, in the immediate district of the two last named localities.—“Sept. 30th, Swallows left. Oct. 8th, large flocks of Swallows arrived here at 9.45 P.M. They continued about till the 12th, when they left at 9 A.M., in an easterly direction, after making several circuitous flights. Oct. 14th, violent gale; Barometer at 9.30 A.M., reading 27.850, lowest on record. Oct. 16th, two young Swallows seen this afternoon. Oct. 17th, a flock of Swallows seen by me at Dunse Castle, flying about the lake, a few feet above the water” Of date Oct. 1st, 1881, at Milne Graden on the Tweed, Mr Milne Home writes. “On 23rd September, the Swallows left this place in a flock of many hundreds. We observed them about 9 A.M., congregating together; and before 12 o’clock they were all off. They had a fair wind, for a southward journey, as the wind was from the N.N.E. It was the same day of the month, that they left this place last year. Here the Swallows arrive between the 20th and 25th April. Perhaps the time of exodus is made to depend on the time when the young broods are ready to fly. Those which remain after that date seem to me to wait for their later broods being ready.” Miss Georgiana Milne Home

communicates further particulars. "The main body of the Swallows left Milne Graden on the 23rd September; but a pair of House Martins and a pair of Chimney Swallows remained later, the former till the 17th October, and the latter till the 15th October. A Chimney Swallow appeared on the 5th November, and was observed for some hours skimming round the house." In reference to another late Swallow, the Rev. Joseph Waite, Norham Vicarage, states: "There were 10 degrees of frost during Sunday night (Oct. 30th), which broke on Monday morning (Oct. 31st), but returned again on Monday night. There was a heavy shower of snow on the Tuesday morning (Nov. 1st); and snow was actually falling, when I saw, at Groatheugh near Norham, a Swallow, which came near me several times." SWIFT: *Spring*.—May 17th, a pair present with other Swallows on the coast; seen again on the 20th; and on the 23rd, Swifts were at one of their breeding places, Cockburnspath Tower. April 26th, four Swifts at Chirnside.—*Dr. Stuart*. May 4th, several Swifts at Kelso.—*A. B.* May 9th, Swifts at Stamfordham.—*J. F. B.* May 2nd, at Berwick.—*G. B.* May 5th, at Belford.—*J. A.* *Autumn*.—Aug. 5th, last seen at Cockburnspath. Aug. 11th, at Kelso Swifts were numerous. None were seen again until the 15th, when they remained till the 18th; none were seen after.—*A. B.* Aug. 18th, departed from Belford.—*J. A.* Aug. 25th, left Berwick.—*G. B.* The Swifts left Chirnside early in September.—*Dr. Stuart*.

DOTTEREL.—April 27th, mild, notes of the Dotterel heard on the high grounds of Dowlaw. May 10, the birds seen, only seven. May 20th, still remained. May 23rd, one seen. May 18th, five Dotterels seen at Lamberton.—*J. M.*

CUCKOO: *Spring*.—April 28th, heard at Pease Bridge. May 3rd, cold, Cuckoo heard on moor at Penmanshiel moss.—May 3rd, heard in Dunse wood. May 5th, seen on the moor at Dowlaw. May 6th, seen at Oldcambus. May 22nd, Cuckoo not heard till to-day at Chirnside; on the previous week at Blackburn and Kelloe (*late*). May 6th and 7th, heard at Fans. May 5th, first heard at Belford. May 12th, arrived at Berwick. April 25th, at Shawdon. April 30th, at Stamfordham. May 2nd, at Marchmont. *Autumn*.—June 22nd, last heard calling on the moors at Blackburn Mill on the Water Eye. Aug. 12th, young Cuckoos on Northfield moor.—*J. L. Mack*. Not seen at Fans after 9th July.—*R. R.* At Belford last heard June 29th. Last specimen observed on Chatton moor, on Aug. 18th.—*J. A.* At Berwick, departed Aug. 7th. "In August we had a great many Cuckoos, some of them being found in very unexpected places in the town, as for instance one in the middle of the day having been seen amongst the fleet of herring boats lying at the Quay. They were all young birds."—*G. Bolam*.

CORN-CRAKE: *Spring*.—April 28th, heard near Langton. May 5th, at Pease Bridge in an open ditch, there being no cover at that date among the grass. May 8th, heard on Chirnside Crofts.—*Dr. Stuart*. May 8th, at Berwick.—*G. B.* April 27th, at Shawdon.—*J. Thomson*. May 2nd, at Stamfordham.—*J. F. B.* May 4th, at Belford.—*J. A.* *Autumn*.—Aug. 29th, a pair last seen at Belford.—*J. A.* Sept. 22nd, Corn-crake shot at St Boswells.—*A. B.*

WATER-RAIL.—Nov. 8th, one from Berwick.—*A. B.*

BLACK-CAP.—April 27th, milder after rain; a single male in a hedge at Oldcambus. April 30th, mild; a single Black-cap in song at intervals in the Pease dean; none heard on May 7th, but on May 8th, its song was heard at the Pease Bridge; on May 11th, Black-caps were singing for a mile up the Pease dean, and shewing themselves. May 19th, arrived in a rush of Flycatchers and Willow-Wrens; two remained behind on the 20th. On May 21st, they continued numerous in the Pease dean. More than usually prevalent this summer. May 5th, arrived at Lamberton.—*J. M.* May 3rd, at Belford.—*J. A.*

REDSTART.—May 3rd, a pair at natural oak-wood, male and female; did not remain. May 13th, settled on the Whitadder, near Edrom. May 19th, latest arrival in a *rush*.—May 6th, Dr. Stuart saw it at Whiterig, as well as several Willow-Wrens.—May 5th, at Lamberton.—*J. M.* May 3rd, at Berwick.—Departed from Berwick in the end of September, (see under **PIED FLYCATCHER**).—At Gordon, the Redstart comes about the end of April, and leaves about the end of September.—At Dunse it was more than usually numerous.—It is increasing on the Railway sides from Penmanshiel Tunnel towards Cockburnspath; built this summer in the garden wall at Lanton, parish of Kirknewton, the male always very alert in giving warning of the approach of suspected foes.

GRASSHOPPER WARBLER.—May 3rd, arrived at Belford.—*J. A.*

GREATER WHITETHROAT. *Spring*—May 9th, good day, wind N.; Whitethroat newly arrived at Dowlaw dean, a male singing. May 10th, clear and cold, three or four male Whitethroats in Oldcambus dean, in song.—May 11th, continue. May 12th, rising high in the air and singing.—May 12th, seen here and there on the Whitadder between Blannerne and Chirnside.—May 18th, pairing. May 19th, widely diffused at Oldcambus. It abounded this year at the Pease-dean, in Edmondsdean, and Blackburn-rig dean.—May 9th, Whitethroat seen at Lamberton.—*J. M.* May 5th, seen at Belford.—*J. A.* May 8th, at Berwick —*G. B.* May 14th, in the hedge-rows at Chirnside.—*Dr. Stuart.* *Autumn.*—The particulars previous to departure were gradually witnessed. August 11th and 12th, Whitethroats commenced gleaning currant berries, red and black, in the garden, which they do not usually haunt. August 15th and 16th, began to pick off the yellow berries of a white flowered Mezereon, which they did not quite relish, but at length ate when scattered on the ground. August 19th, a large number of young birds visited the garden, prying into every corner and crevice and leaping at flies; on the 21st they were searching the grass-plot for insects.—August 22nd, they had left Woodhall woods, E. L.—August 22nd, still in the garden; one captured a Yellow Underwing Moth, secreted in a bush of Auriculas; again in the garden on 25th. On the 27th, there were elsewhere Whitethroats among field beans not yet cut. On the 29th and September 6th, they were in the garden and also among beans. Sept. 7th, they were in the garden hedge. The beans being all cut, there was no longer any cover, but they kept among them till the last. Sept. 15th, a single bird returned to the garden; this being the last visit.

WOOD-WREN.—May 11th, in Pease-dean woods, two birds only, newly arrived; on May 13th it was more dispersed. May 13th, seen at Edrom among the tall trees. Dr. Stuart had observed it at Chirnside Bridge on April 26th,

as well as the Chiff-chaff.—The Wood-Wren was also observed in Harelaw-side wood, and in Blackburn-rig wood.

SEDGE-WARBLER.—May 9th, in willow thickets in Penmanshiel and Dow-law mosses on Coldingham Moor, new arrivals.—May 19th, some arrived with a *rush* of Fly-catchers, etc. May 21st, settled in Cockburnspath Tower dean, above the Pease mill; then numerous.—April 29th, at Belford, where it is not very plentiful.—*J. A.* May 8th, at Berwick.—*G. B.*

SANDPIPER.—May 13th, numerous on the Whitadder, above and below Blanerne, pairing. Dr. Stuart informs me that Sandpipers had been seen on the Whitadder for several days before May 6th. At Berwick in the middle of April, at least before the 24th.—*G. B.* May 2nd, pond at Shawdon.—*J. Thomson.* It was numerous in the end of June on the Eye between Blackburn Mill and Grant's House; two pairs were noticed on Herriot Water near Stockbridge; and a pair at the sea-coast north from Bilsdean; not in the Pease dean.

SPOTTED FLYCATCHER.—May 18th, showery, heavy rain at night; a single Spotted Flycatcher arrived. May 19th, still rainy, wind S.W.; a *rush* of migrants had occurred during the night, or early morning: some 8 or 10 Fly-catchers had taken refuge at the edge of a plantation, where they sat and dozed, or caught insects in the shelter, for the wind blew cold: other 8 were seen elsewhere: and more down the side of a small stream till its near approach to the sea. Along with them were several Willow-wrens, a Redstart, two Blackcaps, three or four Wheat-ears, a Sedge-Warbler, and a pair of Whin-Chats. They continued till evening, when some of them were asleep on paling or twigs. On the 20th they had nearly all left, as well as the majority of their companions; one Fly-catcher only being left on the 27th. The last Flycatcher seen for the season was on Aug. 27th, in a ravine in the East Lothian Lammermoors, above Woodhall. Birds were seen settled during the season at Thurston, E.L. near the mansion; post-road side near Penmanshiel Cottage: and near Renton House; and at Fairneside. May 15th, arrived at Lamberton.—*J. M.* May 23rd, at Berwick.—*G. B.*

PIED FLYCATCHER.—April 27th or 28th, a Pied Flycatcher at Goswick.—*C. Watson.* At Berwick, departed in the end of September, the last being seen on the 26th. Mr George Bolam remarks: "During the end of September and the first days of October, there were large flocks of Redstarts and Willow-wrens in the garden here, with a few Pied Flycatchers, Lesser White-throats, Greater Whitethroats, etc., mixed up with them. They did not appear to stay more than a few hours, but to be succeeded by others, as soon as they took their departure."

GOATSUCKER.—May 28th, Goatsucker at Belford.—*J. A.* May 22nd, at Ninewells, Chirnside.—*Dr. Stuart.* Sept. 14th, Goatsucker in a garden at Kelso.—*A. B.* Oct. 7th, Goatsucker, an old bird, killed by the telegraph wires at Penmanshiel Tunnel.

WOODCOCK.—May 3rd, a pair last seen on the upper part of Aikieside, Pease-dean. Oct. 19th, after great gales, a Woodcock was started in the Pease-dean. About the same date a bird was shot at Cairncross, and another was seen in a turnip field on the higher ground near here. Oct. 24th, three were seen at Bowshiel, and on Nov. 14th, one was shot there. They were very scarce this season. Snipes were likewise uncommon. Oct. 20th, at Lamber-

ton.—*J. M.* The Woodcock as a rule returns to the Cheviots in the middle of October. This year I heard of it from two different parties between the 20th and the 25th —*G. P. Hughes.* In the Belford district there were flights of Woodcocks on Oct. 6th, 9th, 10th, and 15th, and on other days since; but the flocks have been small, and the birds on the whole scarce. Snipes were also scarce, and the few seen were very wild.—*J. A.*

FIELDFARE.—Jan. 5th, 10 Fieldfares and 2 Missels were seen at newly ploughed land. April 29th, Mr George Bolam saw 10 in pairs, near Ayton. Rev. J. F. Bigge hardly saw one Fieldfare this spring. *Autumn.*—Nov. 17th, on Ecklaw Edge. Nov. 5th, at Lamberton.—*J. M.* A few Fieldfares made their appearance at Belford Crag on Oct. 9th, since which time I have not heard of any of this species in the neighbourhood.—*J. A.* Nov. 12th, at Gordon. Not seen on the coast this winter.

REDWING.—Nov. 10th, at Lamberton.—*J. M.* Dec. 6th, Redwings for the first time at Whiterig, Ayton.—*Dr. Stuart.* Mr J. Aitchison reports from Belford: "Winter visitors have been scarce here this year; the most notable migratory wave took place in the early part of October. On the 2nd of that month a rather large flock of Redwings was observed in a fir plantation not far from Chathill Station; and on the 5th a much smaller flock was seen at Beadnel."

GREENSHANK.—Aug. 16th, a Greenshank shot at Clifton Park.—*A. B.*

STARLING.—Before the end of August there were considerable flocks among the Rooks; none, however, were observed in visits paid to the Merse of Berwickshire. Sept. 19th, there had been no Starlings for a long time among the Rooks. Nov. 2nd, snow, some Starlings among Lapwings on sheep pasture. Dec. 7th, scattered flocks of Starlings among Rooks. Dec. 16th, a considerable flock following Rooks. They have, however, been absent here from assemblages of Rooks and Jackdaws during the spring of 1882: and only a single bird is visible at intervals. Dr Stuart remarked that at Chirnside, Starlings disappeared in winter 1881-2; no flocks accompanied the Rooks as usual. Dr. Stuart writes: "Mr Alexander Mitchell Innes informs me that since the evergreens were destroyed by frost at Ayton Castle, last winter the Starlings, which were very plentiful there, have disappeared. At Twizel Castle they bred in the ivy in multitudes. Since the removal of the ivy, they have left in a body. The country people all maintain that they were never seen in flocks with the Rooks in the east of Berwickshire, till their breeding place there was destroyed. Thirty-four years ago, the Starling was a comparatively rare bird here—so much so that when we heard their plaintive whistle in the early March, we said spring had arrived." I heard also that the late proprietor, annoyed with their chattering, had dislodged them from Dunse Castle, by cutting down the evergreens in which they harboured. I have noted birds, say from 1830, and have always seen Starlings accompanying Rooks.

SISKIN.—August 28th, Mr Muirhead saw two Siskins in the Haddington district, newly arrived. Siskins arrived at Gordon Moss on the 15th of Oct. —The Redpole Linnet arrives with them, but there are a few of it all the summer with us.—(*Corr.*) Dec. 12th, two Siskins and two Redpoles at Fans. —*R. R.* A large flock of Siskins was seen at Lilburn, Northumberland, Sept. 26th. This species is often met with in this district (Belford) in considerable

numbers in autumn and spring, but does not pass the winter with us.—*J. A.*

WIGEON.—Sept. 2nd, a Wigeon seen at Berwick.—*G. B.*

RUFF.—Sept. 22nd, two Ruffs in winter plumage from Lennel, Coldstream.—*A. B.*

LESSER WHITETHROAT.—Sept. 26th, last seen at Berwick.—*G. B.*

OSPREY.—Sept. 26th, an Osprey from Colledge Water.—*A. B.*

KNOT.—Sept. 27th, first noticed at Fenham; has been rather plentiful this fall.—*J. A.*

SHOVELLER.—Sept. 28th, from Haddon, Roxburghshire.—*A. B.*

SHORT-EARED OWL.—Has been frequently noticed about Belford this autumn, and I have a strong suspicion that it occasionally breeds in the district.—*J. A.*

GREY-BACKED CROW.—Nov. 1st, wind S. and then S.E., snow. Two arrived; again seen on Nov. 2nd.—On Oct. 13th, Mr Brotherston records one from near Berwick.—Arrived at Berwick, 15th Oct.; one was seen on 11th May, but was probably breeding here.—*G. B.* Oct. 9th and 16th, made its appearance at Belford, but has been scarce this fall.—*J. A.* At Gordon first week of Nov.—(*Correspondent.*)

GREY LINNET.—Oct 31st, a few along with Yellow-hammers and Green-finches on the coast fields; its only occurrence in winter 1881-2. It did not breed at Oldcambus this year; a breeding place among furze noticed at the head of Dowlaw-dean.

GOLDEN-EYE.—Nov. 3rd, from Clifton Park.—*A. B.*

LONG-TAILED DUCK.—Nov. 4th, first Long-tailed Duck of the season seen off Berwick; an immature bird.—*G. B.*

GREAT GREY SHRIKE.—Nov. 5th, Great Grey Shrike found dead a few days before at Kilham, Northumberland; another shot same day at Carham, both females.—*A. B.* One dead at Fans, Nov. 20th.—*R. R.*

MIRLIN.—Feb. 1st and Nov. 19th, shot birds received from Berwick.—*A. B.*

ROUGH-LEGGED BUZZARD.—A Rough-legged Buzzard visited Cockenheugh and neighbourhood during Christmas and New-Year's week. Several attempts were made to shoot it, but it got clear off.—*J. A.*

WOODPECKERS.—“A friend of mine writes me that a Woodpecker was shot this spring at the Dye House; it was not preserved, only the feathers to ‘buss flies.’ Three were seen this spring at East Dipton wood, both Green and Spotted. A Woodpecker was seen Jan. 22nd, 1881, within a mile of Stamfordham.”—*Rev. J. F. Bigge.* In summer, Mr. John Anderson had a short glimpse of what appears from his description to have been a Green Woodpecker, in Lintlaw wood. When seen it was claspng a branch at a distance from the ground. When it flew off it darted up amongst the branches of another tree, and could not be put up again; colour, palish green.

COMMON BUZZARD.—About June 23rd, Mr. G. H. Thompson wrote that a Common Buzzard was then in Alnwick Park, as well as a bird of another species, conjectured to be the Rough-legged Buzzard, but if so, late at that period. Mr. John Dodd, of Cateleugh, shot a Common Buzzard, August 12th, when he and Mr. Ephraim Arkle were returning from the moors.

STOCKDOVE.—“The Stockdove must now be recorded as a permanent resident here (Belford), no less than five nests being known to exist on Middleton estate last summer, all of which I have reason to believe succeeded in rearing broods.”—*John Aitchison.*

PHEASANT AND ITS FOOD.—Kelso, April 1st, 1881.—“I had a peculiar case last week: a Pheasant that was found dead, in good condition, but no wound upon it anywhere. The crop was full of *Lastrea dilatata*, and a few oats. Could the ferns be the cause of death? I never before saw them in any bird.” —*A. Brotherston*. The only case that I know in point is that mentioned by Dr. John Walker in “An Economical History of the Hebrides,” vol. i., p. 337, in a note:—“The stomach of the *Tetrao tetrix*, L., or Black Cock, after the bird had lived in woods during winter, was several times found stuffed with the foliage of the *Polypodium vulgare*, L., or common polypody. This is the only certain instance that has occurred of any animal living upon a plant of the fern kind in this country.” In opening spring in New Brunswick, young fern fronds—“fiddle-heads,” as they are named—are greedily devoured as substitutes for green vegetables, to which the residents have been strangers for many months.* This shews their salubrity.

MARSH TITMOUSE.—Hitherto this has been passed over as a resident in the Pease-dean and adjacent woods. On May 21st I had an excellent opportunity for a considerable time to see a fine male engaged about the flowers of a willow, above the Pease mill. It was without the white spot on the nape, and the transverse white bands on the wings, and was a little larger than *P. ater*. March 13th, 1882. I saw a pair in Aikieside woods. They were leaping into the air occasionally and catching the spring Tipula—*Trichocera regelationis*.

CHAFFINCH FEEDING ON HAWS.—Dec. 27th, in the Pease dean I noticed ten Blackbirds feeding in a hawthorn hedge well loaded with fruit, but a number of haws were accumulated on the ground with the fleshy part undevoured while the stones were cracked, and the kernel was extracted. This was effected by the chaffinches, one of them being detected, which had left several fresh tokens of its occupation.

GOLDEN ORIOLE.—A very fine specimen was obtained in the end of May in the woods of Middleton Hall near Belford. It is a male, and is believed to be the only example of that sex got in Northumberland. It has now passed into Mr George Bolam's collection.—*John Aitchison*.

On the Representation of the Club at Meetings of the British Association, and on the Co-operation of Naturalists' Clubs.
By Sir WALTER ELLIOT, K.C.S.I., F.R.S., etc.

HAVING been nominated to represent the Club at the fiftieth anniversary meeting of the British Association held at York, on the 28th September last, I gave a short account of my mission to the meeting of the Club, at Innerleithen, on the 28th of the same month. On former occasions of a similar nature I had little of interest to communicate, but the proceedings in which I took part at York, were of a more important character, and deserve to find a place in our Transactions.

Up to 1880 a few Societies only were in the habit of sending delegates to the annual meeting of the Association. In that year it was proposed by those

* Adams' Field and Forest Rambles, p. 290.

who were present at Swansea, where the Club was represented by Professor Lebour, in conformity with a suggestion made in the preceding year at Sheffield* that "at future meetings of the B.A., the delegates from the various Scientific Societies should meet, with the view of promoting the best interests of the Association and of the several Societies represented"; to give effect to which Mr H. George Fordsham and Mr John Hopkinson were appointed a committee.

In pursuance of this resolution, they issued a report of the conference at Swansea to all the Scientific Societies in the United Kingdom entitled to send delegates, inviting them to appoint one or more of their members to represent them at the York meeting. Forty-four Societies complied, the delegates from which, on the 6th Sept., after a full discussion, decided on making an application to the General Committee of the Association for a grant in support of their object, and appointing a committee of their own body as

Sir Walter Elliot F.R.S.

Mr H. George Fordsham

Mr John Hopkinson

Mr G. J. Symons, F.R.S., and

Mr W. Whitaker.

per margin, to arrange for a conference of delegates to be held at future annual meetings of the Association, and further to prepare and issue a body of instructions to ensure uniformity in the work of the several Societies for the promotion of the general ends in view.

The first of these proposals was not carried out. There was not time before the close of the Association, to bring the plan in a complete and definite shape before the General Committee, but it was subsequently arranged that Messrs Fordsham and Hopkinson, on behalf of the Committee of delegates, should meet a deputation of the General Committee of the British Association, on the 31st March following, with a view of arranging a permanent mode of procedure.

As regards the 2nd resolution the Committee have under preparation a circular referring to subjects recommended for investigation by Local Scientific Societies, on which Messrs Fordsham and Hopkinson have expended much care and thought, and which it is hoped will shortly be submitted to all properly qualified Local Societies and Clubs, for their consideration and adoption as far as they may see fit during the ensuing year.

We hope the Club will look upon this movement with a favourable eye. It is by no means a new idea. "Fifty years ago," said Professor Ramsay who presided over the Geological Section at York, "fifty years ago, in this city, Viscount Milton the first President of the Association, explained that it had for its chief object 'to give a stronger impulse and more systematic direction to scientific inquiry.' In his address, he pointed out the number of Philosophical Societies which had by degrees sprung up in all parts of the Kingdom; and the practicability through the means of the Association, including all the scientific strength of Great Britain, 'to point out the lines in which the direction of science should move.' And in the same year, 1831, Profes-

* Rule 1. class B. of the British Association for the General Committee of the Association was amended at Sheffield as follows: "The President for the time being of any Scientific Society publishing Transactions, or in his absence a delegate representing him, as well as the Secretary of such society" [being members of the Association shall be members of the General Committee].

Effects of the Winter, 1880-81. By Rev. James 565
Farquharson, A.M.

sor Sedgwick, President of the Geological Society enunciated similar views in his address to the Geological and Geographical Section of the Association. If this argument was thought to have such force in 1831, how much more powerful has it become now, when the number of Local Societies has increased more than tenfold. And accordingly we find that it has forced itself on the conviction of groups of these bodies who have combined to assist each other by united action in various parts of the Kingdom.

1. In Yorkshire so far back as 1863, several Societies formed themselves into the "West Riding Consolidated Naturalists' Society," which after a fluctuating existence for some years, was re-inaugurated in 1871, under the Presidency of Mr C. P. Hobkirk.

2. The Societies in the south west of England have always been distinguished for their zealous scientific work. With a view of strengthening their influence, they organised an annual meeting under the title of the Devonshire Association for the Advancement of Science, Literature, and the Arts in 1862. They meet each year in different places, and publish reports of their Proceedings, which now extend to several volumes, and contain many valuable papers.

3. A union of the Natural History Societies of the Midland counties was inaugurated in 1877, which already includes 23. The members of each Society joining the scheme contribute threepence annually, and meet once a year. The Union publishes a journal and gives an annual prize for an essay on a given subject, the competition restricted to members. The President, Mr Hereward Wake, also offered a prize in 1880, for the best Entomological paper on a genus of insects in the Midland counties.

With regard to the proposal for working in concert on given subjects, it will be in the recollection of members, that the importance of drawing their attention to the practice of more sustained observation and inquiry in promoting the objects for which the Club was instituted, was discussed at the Annual Meeting of Oct., 1878, and that a Committee was then named to report further on the matter. The result of their deliberations is now in the hands of their colleague, Capt. Norman, who consented to act as Secretary, and it is hoped an early day will be found for considering the suggestions there offered in connection with the papers which may be expected from the Committee of delegates.

*Note on the Effects of the Winter 1880-81 on Vegetation. &c.,
in Selkirkshire.* By the Rev. JAMES FARQUHARSON, M.A.,
Selkirk.

THE extraordinarily intense and prolonged cold of the winter of 1880-81 is not likely soon to be forgotten; and in indicating its nature for this county it is not necessary to do more in this brief note than place side by side the mean of all the highest and lowest readings of the thermometer for the winter months of 1878-79, 1879-80, and 1880-81, along with a note of the lowest readings from October to April in 1880-81. As on former occasions these have been furnished to me by Mr. Mathison, the Meteorological Society's observer at Bowhill.

566 *Effects of the Winter, 1880-81.* By Rev. James Farquharson, M.A.

	1878-79.		1879-80.		1880-81.	
	Max.	Min.	Max.	Min.	Max.	Min.
October	53·1	43·2	53·2	35·7	48·5	34·3
November.....	41·1	32·6	45·5	33·2	43·6	29·9
December	34·0	25·3	39·4	26·2	41·6	31·3
January	34·2	23·5	37·2	28·1	31·9	19·5
February	36·9	28·5	45·2	35·0	37·6	27·7
March	42·3	31·2	49·9	30·2	44·4	28·0
April.....	47·1	33·8	52·0	35·1	51·2	31·2

In October the lowest readings were on the 20th and 22nd, 20° and 18°; in November on the 21st, 22nd, and 23rd, 7°, 9°, and 12°; in December, on the 17th and 18th, 14° and 16°; in January, on the 15th 16th, 17th, and 18th, 8°, 6°, 1°, and 5°; in February, on the 7th, 19°; in March, on the 1st, 2nd, and 3rd, 15°, 12°, and 12°, and on the 30th and 31st, 19° and 18°; and in April, on the 6th, 17°. The coldest day was January 17th, when the thermometer never rose above 11°.

These figures indicate a winter of almost unexampled severity, which throughout this county left its mark on vegetation, and proved destructive to wild quadrupeds and birds. I have not learned that Forest Trees were injured, but most Shrubs suffered. The Holly, both standard and in hedges, was cut down to the ground in many instances. Yews were browned at the tips, and the sides of Yew hedges exposed to the sun scathed as if fire had passed over them. Many Bay and Portugal Laurels which had struggled through previous bad winters, now died. Common Ivy was much injured; and more tender shrubs, such as *Aucuba*, *Laurestinus*, *Escallonia*, &c., were killed. *Rhododendrons*, however, both the common *Ponticum* and finer sorts, stood the cold, and flowered well. At Bowhill, the trusses on *Rhododendron Ponticum* were abundant; but in most of the trusses some flowers failed to develop. *Cupressus Lawsoniana* was scarcely touched, but many of the rarer *Conifera* died. In general, Whins were cut down to the ground, and Broom killed outright.

In the lower part of the county Grasses were sensibly weakened, and the pastures in spring proved very poor. Under the impression that the frost, which for months held the earth in its iron grip to a great depth, must have injured the hill pastures, I asked the Rev. J. Falconer, of Ettrick, to make inquiry among the shepherds of his upland parish whether this was the case; but he did not find the impression confirmed. He met with the opinion, indeed, that the deep snow, which lay on the hills unbroken through the winter, had so thoroughly protected the grass, &c., that pastures early in 1881 were more nourishing than usual. This belief he did not entertain himself.

Concerning the general effect of the winter on hill stock, Mr Falconer writes:—"The sheep generally came through the winter much better than could have been expected. We must remember, however, that a vast quantity of hay was consumed by them. The lamb crop was inferior in numbers and quality." While reporting much death among shrubs in his parish, and severe injury suffered by those which survived the winter, he states the following fact from which the inference may be drawn that the sun, bearing strongly on shrubs during intense frost, must be credited with much of the

harm inflicted on them:—"At Annelshope, a place on which the sun does not shine during a considerable part of the winter, every shrub survived, and came out of the storm and frost uninjured. The same shrubs were frosted to the ground in 1860. They are now very large and handsome plants." "Small birds," he adds, "would suffer much; their numbers during summer would indicate this. The crop of small fruit (1881) was unusually large."

I have only to add that the early part of summer 1881 was quite remarkable for the amazing profusion of blossom on flowering trees, such as Laburnum, Lilac, Hawthorn, Chestnut, etc. This is to be attributed to the good ripening season of 1880 preparing the flower buds to withstand the cold of winter.

The following note has been given me by Mr. Steedman, solicitor, Selkirk. It is especially interesting as shewing the proportion of individuals killed in each species, thus indicating the kinds which are hardiest among those mentioned. Ravensheugh is about a mile from Selkirk, at the opening of a small side valley. The trees and shrubs are planted in a sheltered situation in a level gravelly meadow, through which a small stream winds on its way to join the Ettrick, the elevation above sea level being about 415 feet.

"The following Shrubs killed, or frosted down to the ground in winters 1879-80 and 1880-81, at Ravensheugh, near Selkirk:—

	Planted.	Killed.
CRYPTOMERIA, ELEGANS and JAPONICA	3	2
CEDRUS DEODARA	12	6
„ ATLANTICA (top shoots touched)	2	0
ARAUCARIA IMBRICATA	9	6
CUPRESSUS LAWSONIANA	40	4
SEQUOIA (WELLINGTONIA)	14	2
PINUS EXCELSA	12	6
[2 strong plants, 6 feet high, killed to snow level in 1880-81].		
THUJA LOBBI	8	4
„ GIGANTEA	3	2
LAURELS, Bay and Portugal, 2 feet high	24	18
[Came away from root in spring of 1880, but were again cut down by frost next winter, and are now again coming from root.]		
COTONEASTER	24	5
[Those killed were on a wall partly shaded by trees.]		
BERBERIS HOOKERIANA	12	12
[9 coming from root.]		
AUCUBA JAPONICA, var... .. .	6	4
COMMON WHIN, nearly all killed down to roots.		
COMMON BROOM, much damaged		
PHORMIUM TENAX (one plant 10 years old).	3	3."

On the Effects of Winter, 1880-81, at Monteviot, Jedburgh.

By Mr JOHN PAGE, Gardener to the Marquis of Lothian.

I have sent you an abstract account of the weather here from January, 1880, to end of August, 1881.

In the first place, I may mention, that I am sorry not to be able to give an account of amount of rain here for the year 1880, owing to the rain gauge going out of order, but I have sent the number of dull and wet days for each month. The year 1880 was remarkable for the small quantity of fruit of all kinds, and the terrible plague of wasps to eat what little there was; there was taken in the gardens and close round them some 120 nests, all ground ones, there being very few hanging nests noticeable about here. The Oaks were long in starting into growth having to start back in the old wood, but after starting they made rapid growth, and some of the leaves were of an extraordinary size. I was very much afraid that they would all be killed owing to their being so long in starting to grow, and from the frost setting in so intense in the month of October we registering on the 19th, 13° frost; and on the 22nd, 15° frost; then on Nov. 2nd, 16° of frost; 3rd 14°; 7th. 17°; 21st, 29°; 22nd 27° frost; a condition so rigorous that it completely froze the potatoes in the drills and prevented farmers from getting them lifted and stored. However, after standing one of the longest and severest winters on record, they hardly cast a young shoot in the spring, and now that they have had all the dead wood taken out of them, they look wonderfully fresh and healthy. I have little more to say as regards other trees and shrubs, but that Figs and Magnolias were killed farther back this winter than the winter before, although equally as well covered with straw and mats, and that what the other winter began in destroying Yews, Hollies, etc., this winter has finished, and we noticed here that the Hollies that were heaviest laden with fruit in 1879, were the first to be killed. Nearly all vegetables did well in the gardens here last year, but the frost in Oct. and Nov. killed all summer vegetables, such as Cauliflowers, French Beans, Scarlet Runners, etc., which in some mild open autumns we have had very late. All winter vegetables, such as Celery, Brussel Sprouts, Broccoli, Winter Onions, and autumn sown Cabbages, stood the winter very well, until the middle and end of March, when we had some terrific weather. The wind which blew E.N.E., roasted them like a fire, fairly shrivelling them up, and turning them quite black. Roses that had stood the winter very fresh were all cut down to the ground line at that time. Some Yew hedges were scorched and browned as with a fire. We had a fair sprinkling of snow during the winter, but we missed the heavy fall that was in nearly all parts of Scotland, blocking trains up in all directions. We were nearly clear of snow in March when we had the cold winds, so that all the Brassica tribe tell an easier prey to the blasts, and what few cabbages were saved and planted were so weakened that there was scarcely a good early cabbage cut in this district. Strawberry plants suffered dreadfully so that we had but a poor crop. Other small fruits were abundant and good, Cherries were a very fine crop, Apples a good crop, Pears not so good, except some trees on walls which have a good crop if we can get them ripe, but we are suffering a good deal for want of sun. I may just mention that I consider we had a harder winter in 1880-81, than we had in 1879-80, for although we had the Thermometer lower in Dec., 1879, it rose quicker, for instance on Dec. 4th, 1879, at 8 a.m., we had 45° frost; at 2 p.m. we only had 12° frost; whereas in Jan. 17th, 1881, it reached 42° frost, but it stood 35° frost all that day, and (the coldest day that ever I stood out in all my life) 36° frost the following morning, when it rose suddenly at mid-day to only 2° frost.

Dull and Wet Days, from January 1st, 1880, to January 1st, 1881:

January, 21; February, 20; March 16; April, 17; May, 17; June, 16; July, 14; August, 11; September, 10; October, 13; November, 16; December, 17 days.

From January 1st to August 31st, 1881.

January, 17; February, 20; March, 10; April, 11; May, 12; June, 12; July, 17; August, 19 days.

Maximum and Minimum for each Month in the year, 1880.

Month.	Maximum.	Minimum.	Degrees Frost.	Date the frost occurred on.	No. of days at 32° and below.
January,	48	10	22	19th	22
February,	52	24	8	9th	11
March,	60	21	11	22nd	18
April,	65	24	8	30th	10
May,	75	27	5	8th	7
June,	82	28	4	4th	6
July,	83	40	—	2 months clear	
August,	83	40	—	of frost.	
September,	82	30	2	20th	1
October,	68	19	13	19th	17
November,	55	3	29	21st	19
December,	55	9	23	26th	21

Prevailing Winds for each month (year 1880).

Month.	South.	Days.	S.W.	North.	N.W.	East.	West.	S.E.	N.E.
January	„	15	1	9	1	2	3		
February	„	10	1	2	3	5	8		
March	„	10	—	3	—	10	5	3	
April	„	6	—	6	1	5	7	1	4
May	„	4	4	—	2	10	9	1	1
June	„	2	—	1	3	3	10	2	9
July	„	2	1	1	1	8	12	4	2
August	„	1	—	—	—	11	16	2	1
September	„	3	1	4	3	4	11	—	4
October	„	—	—	9	2	7	—	—	13
November	„	—	10	14	2	—	3	—	1
December	„	—	3	10	4	1	10	—	3
		53	21	59	22	66	94	13	38

570 *Effects of the Winter, 1880-81.* By Mr John Page.

Maximum and Minimum for each Month in the year, 1881.

Month.	Maxi- mum.	Mini- mum.	Degrees frost.	Date the frost occurred on.	Date the greatest heat.	No of days at 32° & below.
January,	49	0·10	42	17th	3rd 42	27
February,	48	12·	20	12th	23rd 48	25
March,	55	12·	20	2nd	17th 55	20
April,	64	18·	14	7th	29th 64	13
May,	83	27·	5	17th	30th & 31st 83	4
June,	85	28·	4	10th	1st & 2nd 85	5
July,	89	42·	—	—	5th 89	—
August,	76	34·	—	—	14th 76	—

Prevailing Winds, 1881.

Month.	South.	S.W.	North.	East.	N.W.	West.	S.E.	N.E.
January,	—	4	16	4	6	1	—	—
February,	—	4	6	2	6	1	4	5
March,	—	3	2	1	5	16	1	3
April,	—	4	1	8	1	7	4	5
May,	6	6	—	2	1	8	7	1
June,	2	3	2	1	3	13	4	2
July,	—	9	1	2	—	19	—	—
August,	1	5	2	3	2	14	—	4
	9	38	30	23	24	79	20	20

Number of Degrees of Frost on each day in January, 1881.

January.	Degrees frost.		January.	Degrees frost.
1	2—the	Thermometer	19	12—37 or 5 above freez-
5	5	was only twice	20	25 ing on the 19th.
6	5	above freezing	21	29
7	11	from this date to	22	10
8	15	the 26th.	23	7
9	20		24	30
10	18		25	10
11	12		26	31—the 26th.
12	23		27	30
13	7		28	11
14	20		29	2
15	35		30	2
16	38			
17	42			
18	36			
			Total,	488

488 degrees of frost—something terrible to think of.

The Thermometer was only 13 times above freezing point during the month. Once it reached 49; 3 times 45; once 42; once 41; 4 times 40; once 37; once 36; and once 33.

I may add that pigeons were found dead with hunger and cold, also water-hens and others were so far gone that they could easily be lifted and fed from the hand. Blackbirds became scarce. Thrushes there were none, and the first thrush was heard to whistle on a beech tree to the east of Mounteviot House on May 17th; and though the weather was so severe, we had in April and May a most unusual number of wasps and bumble bees, but the frost on the 10th of June cleared this country side of them, so much so that I have not found a nest of them all summer, and have not seen a single wasp until the beginning of September. We are now having very wet weather, and a great want of sun to ripen fruit, and allow the crops to be harvested.

September, 1881.

J. PAGE.

Rain Fall at Glanton Pyke, Northumberland, in 1881
communicated by FREDK. J. W. COLLINGWOOD, Esq.; and
at Lilburn Tower, Northumberland, communicated by
Mr JOHN DEAS.

GLANTON PYKE.				LILBURN TOWER.			
			Inches.				Inches.
January	..	..	0.74'0	January	..	..	2.100
February	..	..	2.42'5	February	..	..	2.833
March	..	..	2.64'5	March	..	..	2.495
April	..	..	1.31'0	April	..	..	0.805
May	..	..	4.37'0	May	..	..	2.443
June	..	..	1.76'0	June	..	..	1.125
July	..	..	2.73'0	July	..	..	1.375
August	..	..	6.37'5	August	..	..	6.830
September	..	..	4.60'0	September	..	..	7.455
October	..	..	4. 1'5	October	..	..	3.323
November	..	..	3.13'0	November	..	..	3.550
December	..	..	3.54'0	December	..	..	2.440
Total	..		36.64'0	Total	..		36.774

Rain Gauge—Diameter of Funnel,
8in. ; height of Top above ground,
4ft. 3½in. ; above sea level, 517ft.

Rain Gauge—Diameter of Funnel,
10in. square ; height of Top above
ground, 6ft. ; above sea level, 300ft.

Places of Meeting for the Year 1882.

Haddington	.....	.....	Wednesday, May 31.
Hownam, for Chew-Green	.....	.....	„ June 28.
Dunse, for Longformacus	.. .	.....	„ July 26.
Corbridge-on-Tyne	.....	.....	„ Aug. 30.
Jedburgh	.....	.....	„ Sept. 27.
Selkirk	.....	.....	„ Oct. 11.

Weather Notes at Marchmont from the year 1870 to the year 1881 inclusive. By Mr PETER LONEY, Marchmont.

	1870.			1871.			1872.			1873.		
	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.
January..	1·95	19°	83	1·36	18°	63	3·71	20°	47	3·92	22°	71
February	2·50	12	45	3·40	25	65	3·69	27	70	2·54	16	103
March.....	1·20	20	91	1·39	12	142	4·09	24	72	2·23	25	111
April.....	0·61	30	186	4·30	25	81	3·91	32	89	0·74	27	148
May.....	1·72	30	151	1·79	26	182	3·84	31	85	3·05	30	133
June.....	2·78	40	143	3·03	37	164	4·46	38	119	3·73	40	150
July.....	1·01	44	185	3·59	41	160	3·70	40	181	4·67	41	186
August...	2·29	42	187	2·39	38	189	3·50	42	105	3·59	40	141
September	1·94	32	159	4·18	37	94	7·37	34	73	3·42	34	159
October...	4·83	31	105	3·18	28	57	5·38	29	97	4·32	27	96
November	2·76	27	63	3·69	25	42	4·86	30	51	3·00	28	47
December.	4·75	11	52	3·44	24	52	5·31	22	47	1·28	27	65
Totals	28·44		1450	35·74		1291	53·82		1036	36·49		1400

	1874.			1875.			1876.			1877.		
	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.
January..	1·64	27°	54	4·33	10°	36	1·25	12°	87	5·91	21°	91
February.	1·74	12	64	2·04	24	62	4·35	20	61	2·60	19	123
March....	1·99	20	149	1·53	24	80	3·26	18	81	4·04	19	109
April.....	1·60	30	192	1·18	31	152	5·09	25	111	4·53	26	119
May.....	2·30	31	101	1·54	38	194	0·96	26	202	3·51	27	210
June.....	2·54	32	243	2·66	38	214	2·56	34	276	2·55	39	253
July.....	2·89	44	211	2·26	40	259	1·70	39	280	5·22	40	127
August...	5·60	40	152	1·89	43	259	5·37	36	250	7·98	36	106
September	2·31	36	114	4·22	39	170	4·96	38	151	1·86	37	136
October..	3·18	32	98	1·23	29	99	2·67	32	92	3·62	24	127
November	4·99	24	51	5·48	23	66	5·39	23	77	2·34	25	101
December	5·11	5	51	2·03	26	93	11·42	20	43	1·90	18	70
Totals	35·92		1480	32·28		1684	48·98		1711	46·06		1572

	1878.			1879			1880			1881.		
	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.	Rain in Inch.	Lowest Tem.	Hours' Sun.
January...	3.11	19°	99	2.08	10°	56	0.83	16°	66	2.73	2°	69
February..	1.67	28	90	2.66	14	50	2.20	26	87	3.00	19	56
March.....	1.16	23	155	2.47	18	94	2.34	23	154	3.48	10	135
April.....	1.70	27	172	2.72	25	157	2.63	30	129	1.69	24	145
May.....	2.81	31	158	2.24	28	196	1.32	33	169	2.35	31	269
June.....	2.83	35	231	5.32	34	132	3.48	35	260	3.06	32	187
July.....	1.19	42	246	6.40	36	112	5.17	42	164	3.04	38	176
August....	5.64	43	165	3.24	42	166	1.05	43	188	5.89	37	133
September.	3.10	34	189	1.59	35	136	4.82	37	129	5.07	39	70
October....	2.76	30	111	1.19	30	120	3.87	25	111	3.63	24	106
November..	6.27	22	74	2.84	25	103	4.86	16	92	3.25	26	57
December..	3.22	10	70	1.17	0	53	4.46	16	63	1.86	20	59
Totals	35.46		1760	33.92		1375	37.03		1612	39.05		1462

Average of the 12 years' rainfall, 38.6825 inches.

„ „ sunshine, 1486 hours.

Remarks.

The year 1872 is the wettest—53.82 inches of rain fell, and we had only 1036 hours of sunshine—450 under the average of the 12 years.

The year 1876 is also very wet—48.98 inches of rain—16.81 inches of which fell during November and December.

The year 1877 is also very wet—46.06 inches of rain—13.20 inches falling in July and August, destroying the grain crops.

The year 1878 was not so wet—35.46 inches of rain—5.64 inches fell in August, which seriously affected the grain crop.

The year 1879, a remarkable period—33.92 inches of rain—11.72 inches of which fell in June and July, being nearly a third of the year's rainfall, and during the two months usually the driest. This was a cold year. Thermometer below zero.

The year 1880. The first five months were dry. In July 5.17 inches of rain fell, and in September 2.24 inches of rain fell in twenty-four hours, thoroughly saturating all grain in the stook, from which it never recovered.

The year 1881. This is also a remarkable year. August gave us 5.89 and September 5.07 inches of rain—10.96—materially affecting all the grain crops. Barley, which at the end of July promised fair, suffered most. Harvest was prolonged much. From the 14th October to the end of the year we had terrific gales.

Marchmont is 500 feet above sea, and almost in the centre of the county of Berwick.

Note—All these observations were made with tested instruments, and according to the Scottish Meteorological Society's rules.

*Donations to the Berwickshire Naturalists' Club, from
Scientific Societies, &c., 1881-82.*

- BELFAST. Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1879-80 Ser. ii, Vol. i, Part vii. 1881, 8vo. *The Club.*
- BREMEN. Abhandlungen herausgeben vom Naturwissenschaftlichen Vereine zu Bremen' viiBd. 3Heft. 1882, 8vo.
- BUCKHURST HILL, ESSEX. Transactions of the Epping Forest and County of Essex Naturalists' Field Club, Vol. ii, Part 5. 1881, 8vo. *The Club.*
- CARDIFF. Report and Transactions of the Cardiff Naturalists' Society, Vol. xiii. London, 1882, 8vo. *The Society.*
- CROYDON. Proceedings and Transactions of the Croydon Microscopical and Natural History Club from 1878 to 1881. Croydon, 1881, 8vo. *The Club.*
- CAMBRIDGE, MASS., U.S.A. Annual Report of the Curator of the Museum of Comparative Zoology at Harvard College for 1880-1. 8vo. *From Harvard College.*
- DUBLIN. Scientific Proceedings of the Royal Dublin Society, Vol. ii., Part vii.; Vol. iii., Parts i., ii., iii., and iv. Dublin, 1880-1, 8vo. *The Society.*
- Scientific Transactions of the Royal Dublin Society, Vol. i., Parts 13 and 14. 1880-1, 4to. *Ibid.*
- EDINBURGH. Transactions and Proceedings of the Botanical Society, Vol. xiv., Part ii. 1882, 8vo. *The Society.*
- Transactions of the Edinburgh Geological Society, Vol. iv., Part i. 1881, 8vo. *The Society.*
- Proceedings of the Society of Antiquaries of Scotland, 1879-80, and 1880-81, Vols. ii. and iii., new series. *The Society.*
- Proceedings of the Royal Physical Society, Session 1880-81, Vol. vi., Part i. 1881, 8vo. *The Society.*
- The Haigs of Bemersyde. By John Russell. 1881, 8vo. *The Author.*
- ESSEX, SALEM, U.S.A. Bulletin of the Essex Institute, Vol. xii. 1880, 8vo. *The Institute.*
- GIESSEN. Zwanzigster Bericht der Oberhessischen Gessellschaft für Natur und Heilkunde. 1881, 8vo. *The Society.*
- GLASGOW. Proceedings of the Philosophical Society of Glasgow, 1880-1, Vol. xiii., No. i. 1881, 8vo. *The Society.*

GLASGOW. Transactions of the Geological Society of Glasgow, Vol. vi., Part ii., 1878-79, 1879-80. 1882, 8vo.

The Society.

LEEDS. Annual Report of Leeds Philosophical and Literary Society for 1880-1. 8vo.

The Society.

——— Transactions of the Yorkshire Naturalists' Union, Part iv. Leeds and London, 1882, 8vo.

The Union.

——— Remarks on the Geographical Distribution of Terrestrial Mollusca. By C. P. Cloyne, Leeds, 1878, 8vo. *Ibid.*

——— Life History of British Helices. By John W. Taylor. No. 1, Helix Arbustorum, 1882.

Ibid.

LONDON. Proceedings of the Geologists' Association, vol. vii., Nos. 2, 3, and 4. London, 1881-2, 8vo. *The Association.*

——— Journal of the Anthropological Institute of Great Britain and Ireland, Vol. x., No. iii and iv.; Vol. xi., Nos. 1, 2, and 3. London, 1881-2.

The Institute.

——— Journal of Science, etc., Vol. iv., No. ci. May, 1882, 8vo.

The Publisher.

NEWCASTLE. Some more Scraps about Birds. By Charles Murray Adamson. 1880-1, 8vo.

The Author.

WELSHPOOL. Collections, Historical and Archæological, relating to Montgomeryshire and its Borders, Vol. xiv., parts 2 and 3; Vol. xv., part 1; and General Index to the first 14 vols. London, 1881-2, 8vo.

From the Powysland Club.

General Statement.

THE INCOME AND EXPENDITURE have been:—

INCOME.

	£	s.	d.
Arrears received	18	6	0
Entrance Fees	12	0	0
Subscriptions	73	16	0
	<hr/>		
	104	2	0
Balance due Treasurer ..	4	5	9
	<hr/>		
	£108 7 9		

EXPENDITURE.

Balance due Treasurer from last account	5	2	2
Gibb and Hay for Lithographing ..	2	1	0
Printing	67	6	0
Expenses at Meetings	7	7	8
Postages and Carriages	16	10	2
Berwick Salmon Company	10	0	9
	<hr/>		
	£108 7 9		

BERWICKSHIRE NATURALISTS' CLUB.

LIST OF MEMBERS, JUNE, 1882.

	Date of Admission.
1. Francis Douglas, M.D., Woodside, Kelso	July 30, 1834.
2. David Milne-Home, LL.D., F.R.S.E., F.S.A. Scot., etc., Milne-Graden House, by Coldstream, and 10, York Place, Edinburgh	Sept. 21, 1836.
3. Frederick J. W. Collingwood, Glanton Pyke, Alnwick..	May 6, 1840.
4. Jonathan Melrose, Coldstream	" "
5. David Macbeath, Old Charlton, Kent	Dec. 16, ,,
6. John B. Boyd, Cherrytrees, Yetholm	Sept. 18, 1841.
7. James Tait, W.S., Edenside, Kelso.. ..	July 26, 1843.
8. William Brodrick, Little Hill, Chudleigh, South Devon	Sept 20, "
9. John Turnbull, Abbey St. Bathans, W.S., F.S.A. Scot., 49, George Square, Edinbugh	" "
10. Ralph Carr-Ellison, F.S.A. Scot., Dunstan Hill, Gates- head	Oct. 18, ,,
11. Henry Gregson, Lowlynn, Beal	May 3, 1846.
12. Rev. Hugh Evans, M.A., Scremerston, Berwick	" "
13. Robert Hood, M.D., 5, Salisbury Road, Newington, Edinburgh	May 3, 1848.
14. Rev. William Darnell, M.A.	June 25, 1849.
15. David Francis S. Cahill, M.D., Berwick	Oct. 18, ,,
16. John Craster, Craster Tower, Lesbury	Sept. 18, 1850.
17. William Dickson, Sea-bank House, Alnmouth	Oct. 15, 1851.
18. Matthew J. Turnbull, M.D., Coldstream	June 30, 1852.
19. Sir John Marjoribanks, Bart., Lees, Coldstream	" "
20. Rev. George Selby Thomson, M.A., Acklington	" "
21. William Stevenson, Paisley.. ..	Sept. 7, 1853.
22. William B. Boyd, Faldonside, Melrose	Oct. 12, ,,
23. Charles Stuart, M.D., Chirnside	Aug. 16, 1854.
24. Rev. F. R. Simpson, B.A., North Sunderland, Chathill	" "
25. The Ven. Archdeacon George Hans Hamilton, Egling- ham, Alnwick	Oct. 25, ,,
26. Charles Rea of Halterburn	June 23, ,,
27. George Culley, Fowberry Tower, Belford	" "

- | | |
|--|----------------|
| 28. William Marjoribanks, Lees, Coldstream | June 23, 1854 |
| 29. Charles Watson, F.S.A. Scot., Dunse | Oct. 20, 1856. |
| 30. Rev. Thomas Leishman, D.D., F.S.A. Scot., Linton,
Kelso | " " |
| 31. George P. Hughes, Middleton Hall, Wooler | " " |
| 32. F. R. Wilson, F.B.S.A. Alnwick, | June 25, 1857. |
| 33. The Right Hon. Lord Tweedmouth, Brook House, Upper
Brook Street, Park Lane, London ; and Guisachan,
Beauly | July 30, " |
| 34. Patrick Thorp Dickson, 13, Edinburgh Terrace, Notting
Hill, London, W. | Oct. 28, " |
| 35. William Sherwin, The Grange, Farnborough, Hants | " " |
| 36. Rev Thomas Procter, M.A., Tweedmouth | " " |
| 37. Matthew T. Culley, Coupland Castle, Wooler | " " |
| 38. Rev. J. W. Dunn, M.A., Warkworth | " " |
| 39. John Marshall, M.D., Chatton Park, Belford | June 24, 1858. |
| 40. James Robson Scott, M.D., Belford, Yetholm ; and 27,
Abercromby Place, Edinburgh | " " |
| 41. John Wheldon, 4, Paternoster Row, London, E.C. | Oct. 27, " |
| 42. Middleton H. Dand, Hauxley Cottage, Acklington | June 28, 1859. |
| 43. Rev. Aislabie Proctor, B.A., Doddington, Wooler | " " |
| 44. Stephen Sanderson, Solicitor, Berwick | " " |
| 45. Dennis Embleton, M.D., Eldon Square, Newcastle | " " |
| 46. Charles B. Pulleine Bosanquet, Rock, Alnwick | Sept. 29, " |
| 47. Robert Douglas, Solicitor, Berwick | June 28, 1860. |
| 48. John Riddell, St. Ninian's, Wooler | Sept. 13, " |
| 49. Watson Askew, Pallinsburn, Coldstream | Oct. 11, " |
| 50. Rev. Edward A. Wilkinson, M.A., Tudhoe Vicarage,
Spennymoor, Durham | May 30, 1861. |
| 51. Robert H. Clay, M.D., 4, Windsor Villas, Plymouth | " " |
| 52. J. A. H. Murray, LL.D., Mill Hill, Hendon, Middlesex,
N.W. | June 27, " |
| 53. Charles Douglas, M.D., Woodside, Kelso | " " |
| 54. Archibald Campbell Swinton, LL.D., F.R.S.E., F.S.A.
Scot., Kimmerghame, Dunse | " " |
| 55. Rev. Patrick George McDouall, M.A., Cosgrave Rectory,
Stony Stratford | July 25, " |
| 56. Thomas Brewis, 6, Regent Terrace, Edinburgh | " " |
| 57. Rev. W. L. J. Cooley, M.A., Ponteland, Newcastle | " " |
| 58. Rev. W. Greenwell, M.A., F.R.S., F.S.A., Hon. F.S.A.,
Scot., Durham | " " |
| 59. Sir George H. Scott Douglas, Bart., Springwood Park,
Kelso | Aug. 29, " |
| 60. William Cunningham, Rosybank, Coldstream | Sept. 26, " |
| 61. Thomas Friar, Grindon Ridge, Norham | " " |
| 62. James Bowhill, Solicitor, Ayton | " " |
| 63. Rev. John Scarth, Holy Trinity Vicarage, Milton-next-
Gravesend | " " |
| 64. Septimus H. Smith, Galagate House, Norham | " " |

65. Dr. John Paxton, Berwick	Sep. 26, 1861.
66. Charles Anderson, Solicitor, Jedburgh	June 26, 1862.
67. Major Henry R. Hardie, Penquit, Torquay	„ „
68. John Scott Dudgeon, Longnewton Place, St. Boswells	„ „
69. William Elliot, Solicitor, Jedburgh	„ „
70. Rev. J. C. Bruce, LL.D., F.S.A., Framlingham Place, Newcastle	July 31, „
71. John Tate, Barnhill, Acklington	„ „
72. Robert Crossman, Cheswick House, Beal	„ „
73. Rev. Peter Mearns, Coldstream	„ „
74. William Crawford, Solicitor, Dunse	Aug. 15, „
75. George Rea, Middleton House, Alnwick	„ 28, „
76. Sir Walter Elliot, K.C.S.I., LL.D., F.R.S., F.L.S., F.S.A. Scot., Wolfelee, Hawick	June 25, 1863.
77. William Dickson, Canaan Lodge, Edinburgh	„ „
78. Alexander Curle, F.S.A. Scot., Melrose	„ „
79. John Edmond Friar, Grindon Ridge, Norham	„ „
80. Francis Russell, Sheriff Substitute, Jed-bank, Jedburgh	„ „
81. William Hilton Dyer Longstaffe, F.S.A., Gateshead	„ „
82. Robert Middlemas, Solicitor, Alnwick	„ „
83. James Hardy, Oldcambus, Cockburnspath	„ „
84. Rev. Edward L. Marrett, M.A., Lesbury, Bilton	July 39, „
85. Thomas Clutterbuck, Warkworth	„ „
86. Thomas Tate, Solicitor, Alnwick	„ „
87. Rev. Adam Davidson, M.A., Yetholm	„ „
88. Robert Brown, Littlehoughton, Chathill	Sept. 29, „
89. Rev. John F. Bigge, M.A., Stamfordham, Newcastle	May 26, 1864.
90. Christopher S. Bell, Stanwick, Darlington	Sept. 29, „
91. J. Towleron Leather, F.S.A., Middleton Hall, Belford	„ „
92. Rev. James Farquharson, M.A., Selkirk	June 29, 1865.
93. Henry Richardson, M.D., R.N., Castle Terrace, Berwick	„ „
94. Thomas Allan, Horncliffe House, Berwick	„ „
95. Frederick Lewis Roy, Nenthorn, Kelso	July 27, „
96. Robert Carr Fluker, M.D., Berwick	May 31, 1866.
97. James Smail, F.S.A. Scot., Banker, Kirkcaldy	July 26, „
98. Rev. John M. H. N. Graham, Maxton, St. Boswells,	Aug. 30, 1866.
99. John Reed Appleton, F.S.A., Western Hill, Durham,	Sept. 26, 1867.
100. Rev. Peter McKerron, M.A., Kelso,	„ „
101. William Currie, Linthill, St. Boswells,	„ „
102. William Blair, M.D., Jedburgh,	„ „
103. Major The Hon. R. Baillie Hamilton, F.S.A., Scot., Langton House, Dunse,	„ „
104. Alex. Hay Borthwick, Ladiesyde Lodge, Melrose,	„ „
105. His Grace The Duke of Northumberland, Alnwick Castle,	June 25, 1868.
106. Robert G. Bolam, Berwick,	Sept. 25, „
107. Rev. J. Elphinstone Elliot Bates, B.A., Milburn Hall, Newcastle,	„ „
108. James Brunton, Broomlands, Kelso,	„ „
109. Capt. James F. MacPherson, Melrose,	„ „

110. Major Francis Holland, Alnwick,	..	..	Sept. 24, 1868.
111. James Heatley, Alnwick,	..	..	" "
112. C. H. Cadogan, Brenckburne Priory, Morpeth,	..	..	" "
113. Robert Romanes, F.S.A. Scot., Harryburn, Lauder,	..	..	Sep. 30, 1869.
114. Thomas Broomfield, Solicitor, Lauder,	..	..	" "
115. John Bolam, Alnwick,	..	..	" "
116. Rev. William I. Meggison, M.A., South Charlton, Chathill,	..	..	" "
117. John Dunlop, Solicitor, Berwick,	..	..	" "
118. Pringle Hughes, Middleton Hall, Wooler,	..	..	" "
119. James Purves, Berwick,	..	..	" "
120. George L. Paulin, Berwick,	..	..	" "
121. Rev. David Paul, M.A., Roxburgh, Kelso,	..	..	" "
122. Thomas Patrick, Berwick,	..	..	" "
123. John Scott, Corporation Academy, Berwick,	...	..	" "
124. John Pringle Turnbull, Alnwick,	...	...	" "
125. Rev. E. B. Trotter, M.A., St. Michael's Vicarage, Alnwick,	...	...	" "
126. James Wood, Woodburn, Galashiels,	...	...	" "
127. Matthew Young, Castle Terrace, Berwick,	...	...	" "
128. Rev. Thomas Brown, F.R.S.E., 16 Carlton Street, Edinburgh,	...	...	May 11, 1871.
129. Rev. Thomas Rogers, M.A., Precentor of Durham,	...	...	Sep. 26, "
130. Rev. Robert Paul, F.S.A. Scot., Dollar,	...	...	" "
131. Rev. T. S. Anderson, Crailing, Kelso,	...	...	" "
132. Rev. David W. Yair, Frith Manse, Finstown, Thurso,	...	...	" "
133. John Philipson, 9 Victoria Square, Newcastle,	...	...	" "
134. Rev. Ambrose Jones, M.A., Stannington, Cramlington,	...	...	" "
135. W. E. Otto, Jed-neuk, Jedburgh,	...	...	" "
136. William Weatherhead, Solicitor, Berwick,	...	...	" "
137. Rev. H. E. Henderson, B.A., Alwinton, Morpeth,	...	...	" "
138. Alexander James Main, M.D., Alnwick,	...	...	" "
139. Thomas Arkle, Highlaws, Morpeth,	...	...	Sep. 26, 1872.
140. James T. S. Doughty, Solicitor, Ayton,	...	...	" "
141. Capt. J. Carr-Ellison, Hedgeley, Alnwick, and 16 Rutland Square, Edinburgh,	...	...	" "
142. W. T. Hindmarsh, Solicitor, Alnwick,	...	...	" "
143. Major James Paton, Ferniehurst, Jedburgh,	...	...	" "
144. Henry A. Paynter, Solicitor, Alnwick,	...	...	" "
145. Major R. Thompson, Walworth Hall, Darlington,	...	...	" "
146. John Hutton Balfour, M.A., M.D., LL.D., F.R.S.S.L., and E., F.L.S., F.S.A., Scot., Emeritus Professor of Botany, Inverleith House, Edinburgh,	...	...	July 30, 1872.
147. Rev. Evan Rutter, B.A., Spittal, Berwick,	...	...	Sep. 25, 1873.
148. Rev. Hastings M. Neville, Ford Rectory, Cornhill,	...	...	" "
149. Rev. James Henderson, M.A., Ancroft, Beal,	...	...	" "
150. Lieut.-Col. David Milne Home, M.P., Paxton House, Berwick, and Royal Horse Guards, London,	...	...	" "
151. Rev. William Stobbs, M.A., Gordon,	...	...	" "
152. James Nicholson, Murton, Berwick,	...	...	" "

153.	Rev. Joseph Waite, M.A., Vicarage, Norham,	...	Sep. 25, 1873.
154.	Rev. Beverley S. Wilson, B.A., Duddo, Norham,	...	Sep. 24, 1874.
155.	Robert Gray, F.R.S.E., F.S.A., Scot., 13 Inverleith Row, Edinburgh,	... ..	" "
156.	Lieut.-Col. Crossman, C.M.G., R.E., Horse Guards, London,	... ..	" "
157.	F. M. Norman, Commander, R.N., Cheviot House, Berwick,	... ..	" "
158.	William Willoby, Solicitor, Berwick,	... ..	" "
159.	James Hastie, Edrington, Berwick, and 305 High St., Wapping, London, E.,	... ..	" "
160.	George Muirhead, Paxton, Berwick,	... ..	" "
161.	Thomas Henderson, M.A., Bedford County School, Bedford,	... ..	" "
162.	J. B. Kerr, Commercial Bank, Kelso,	... ..	" "
163.	Edward Liddell, Morris Hall, Norham,	... ..	" "
164.	Samuel Grierson, M.D., District Asylum, Melrose,	... ..	" "
165.	Matthew G. Crossman, Berwick,	... ..	Sep. 29, 1875.
166.	John Freer, Solicitor, Melrose,	... ..	" "
167.	J. A. Forbes, Commander, R.N., West Coates House, Berwick,	... ..	" "
168.	David Watson, Hillside Cottage, Hawick,	... ..	" "
169.	Adam Robertson, Alnwick,	... ..	" "
170.	Charles Erskine, The Priory, Melrose,	... ..	" "
171.	Arthur H. Evans, Scremerston, Berwick,	... ..	" "
172.	James Allan, Ava Lodge, Berwick,	... ..	" "
173.	John Bertram, Howpark, Grant's House,	... ..	" "
174.	John Hood, Oldcambus Townhead, Cockburnspath,	... ..	" "
175.	Rev. Joseph Hunter, M.A., Cockburnspath,	... ..	" "
176.	Lieut.-Col. Andrew Aytoun, R.A., Caledonian United Service Club, Edinburgh,	... ..	" "
177.	Capt. Theodore Williams, Heatherslaw House, Cornhill,	... ..	" "
178.	Rev. Mandell Creighton, M.A., Vicarage, Embleton, Chathill,	... ..	" "
179.	T. W. McDowall, M.D., F.S.A., Scot., County Asylum, Cottingwood, Morpeth,	... ..	" "
180.	John Halliday, 5 Holland Park, Bayswater, London, W.	... ..	" "
181.	Rev. Joseph Hill Scott, M.A., Kelso,	... ..	" "
182.	George Greig, 19 St. Giles Street, Edinburgh,	... ..	" "
183.	Alexander Buchan, A.M., F.R.S.E., Sec. Met. Soc., Scot., 72 Northumberland Street, Edinburgh,	... ..	" "
184.	Edward Ridley, 2 Charles Street, Berkeley Square, London, Barrister at Law,	... ..	Sep. 27, 1876.
185.	Rev. George P. Wilkinson, M.A., Harperley Park, Durham,	... ..	" "
186.	Capt. Wm. Elliott Lockhart, Branzholme, Hawick,	... ..	" "
187.	Sir Edward Blackett, Bart., Matfen, Newcastle,	... ..	" "
188.	Rev. Geo. W. Sprott, D.D., North Berwick,	... ..	" "
189.	John L. Crombie, M.D., North Berwick,	... ..	" "
190.	Rev. Paton Gloag, D.D., Galashiels,	... ..	" "

191.	Henry S. Anderson, M.D., Selkirk,	...	...	Sep. 27, 1876.
192.	James Brown, Knowepark, Selkirk,	...	...	" "
193.	George Rodger, Philipburn, Selkirk,	...	...	" "
194.	Andrew Currie, Darnick, Melrose	..	..	" "
195.	William Lyall, Literary and Philosophical Society, New-			
	castle	..	..	" "
196.	William Topley, F.G.S., Office of H.M. Geological			
	Survey of England and Wales, 28, Jermyn Street,			
	London	..	..	" "
197.	Hubert E. H. Jerningham, M.P., Longridge Towers,			
	Berwick	..	..	" "
198.	Alexander Towers Robertson, Berwick	..	..	" "
199.	Rev. W. Dobie, M.A., Ladykirk, Norham	..	..	" "
200.	Rev. W. H. Walter, M.A., 12, North Bailey, Durham..			" "
201.	Lieut. James Hunter, Anton's Hill, Coldstream	..	..	" "
202.	George Brisbane Douglas, Springwood Park, Kelso	..	..	" "
203.	Rev. G. H. Ainger, D.D., Whitton Tower, Rothbury,			
	Morpeth	..	..	" "
204.	Sir Molineux Hyde Nepean, Bart., F.S.A. Scot., Loder's			
	Court, Bridport, Dorset	..	..	" "
205.	James Robertson, Rock Moor House, Alnwick	..	..	" "
206.	Alexander Scott, Hillside, Lockerbie..	..	..	" "
207.	Robert Richardson Dees, Solicitor, Pilgrim Street, New-			
	castle	..	..	" "
208.	John Ferguson, Solicitor, Dunse	..	..	" "
209.	Archibald Buchan Hepburn, Smeaton Hepburn, Preston-			
	kirk	..	..	" "
210.	James Lumsden, F.Z.S., F.S.A., Scot., Arden House,			
	Alexandria, Dumbartonshire	..	..	Oct. 31, 1877.
211.	James Tait, Thropton, Morpeth	..	..	" "
212.	Isaac Bayley Balfour, Sc.D., M.B.C.M., F.R.S.E., F.L.S.,			
	F.G.S., Professor of Botany in the University of Glas-			
	gow	..	..	" "
213.	Robert Mason, Secretary to the Nat. His. Society of			
	Glasgow; 27, West George Street, Glasgow	..	..	" "
214.	Alexander Rutherford Turnbull, Mansfield, Hawick	..	..	" "
215.	George Heriot Stevens, Gullane by Drem, East Lothian	..	..	" "
216.	Charles Felix McCabe, Thirston House, Felton, Ackling-			
	ton	..	..	" "
217.	John J. Horsley, Alnwick	..	..	" "
218.	Rev. Charles Green, B.A., Embleton, Chathill	..	..	" "
219.	Thomas Chas. Hindmarsh, Barrister-at-law, 1, Essex			
	Court, Temple, London	..	..	" "
220.	Rev. R. Hopper Williamson, M.A., Whickham, Gates-			
	head	..	..	" "
221.	Rev. R. F. Proudfoot, B.A., Fogo, Dunse	..	..	" "
222.	W. H. Johnson, Tweed Villa, Relugas Road, Edinburgh	..	..	" "
223.	Alan Swinton, Swinton House, Dunse	..	..	" "

224.	G. T. Lebour, M.A., F.G.S., Professor of Geology, University of Durham College of Physical Science, New- castle; 2, Woodside Terrace, Gateshead	Oct. 31, 1877.	..	..	..	..
225.	Robert L. Peploe, Commercial Bank, Edinburgh	..	..	..	..	..
226.	Rev. James A. Sharrock, B.A., 22, Ashfield Terrace, Newcastle	..	..	..	..	..
227.	Rev. Walker Featherstonhaugh, M.A., Edmondbyers, Blackhill, Co. Durham	..	..	..	..	..
228.	Geo. E. Watson, Solicitor, Alnwick	..	..	..	..	..
229.	Lowrey Calvert Chrisp, Hawkhill, Alnwick	..	..	..	..	..
230.	Lieut.-Col. Matthew Charles Woods, Holleyn Hall, Wylam..	..	..	..	..	..
231.	George H. Thompson, Alnwick	..	..	..	..	..
232.	William Lang Blackie, Holydean, St. Boswells	..	..	..	..	..
233.	Andrew E. Scougal, H.M. Inspector of Schools, Melrose	..	..	..	..	..
234.	Captain John Broad, Ashby, Melrose	..	..	..	..	..
235.	John Thomson, Kelso	..	..	..	..	..
236.	James Denholm, M.D., Broomhill, Dunse	..	..	..	..	..
237.	Rev. J. Mackenzie Allardyce, D.D., Bowden, St. Boswells	..	..	..	..	..
238.	Dr E. C. Robertson, Otterburn, Newcastle	..	..	..	..	..
239.	William Wilson, Berwick,	..	..	..	..	..
240.	The Right Hon. The Earl of Haddington, Tynningham House, Prestonkirk	..	..	..	..	..
241.	Peter Loney, Marchmont, Greenlaw	..	..	..	..	Oct. 16, 1878.
242.	William A. Hunter, M.A., LL.B., Solicitor, Dunse	..	..	..	..	..
243.	Thomas Darling, Governor's House, Berwick	..	..	..	..	..
244.	Rev. John Walker, Whalton, Newcastle	..	..	..	..	..
245.	Rev. R. E. Taylor, B.A., Alnwick	..	..	..	..	..
246.	Arthur Thew, Alnmouth, Alnwick	..	..	..	..	..
247.	Lieut. William Hurb Sitwell, Barmoor	..	..	..	..	..
248.	Edward Dornan Hodgson, Barrister-at-Law, 2 Plow- den Buildings, Temple, London	..	..	..	..	..
249.	John Russell, "Chambers' Journal Office," Edinburgh	..	..	..	..	..
250.	Thomas Turnbull, Lilliesleaf, St. Boswells	..	..	..	..	..
251.	Alexander Leitch, Fairneyside, Ayton	..	..	..	..	..
252.	John Watson Laidlay, F.S.A. Scot., Seacliffe, North Berwick	..	..	..	..	..
253.	J. K. Weatherhead, Solicitor, Berwick	..	..	..	..	..
254.	Stanley Scott, Abbey House, Kelso	..	..	..	..	..
255.	James Greenfield, Reston	..	..	..	..	Oct. 15, 1879.
256.	James Mein, Lamberton	..	..	..	..	..
257.	George Skelly, Alnwick	..	..	..	..	..
258.	Rev. Canon Tristram, LL.D., F.R.S., F.S.A., Durham	..	..	..	..	..
259.	Rev. David Millar, B.D., LL.B., Mordington, Berwick	..	..	..	..	..
260.	Thomas Cook, Solicitor, Alnwick	..	..	..	..	..
261.	Charles M. Adamson, Crag Hall, Jesmond, Newcastle	..	..	..	..	..
262.	W. F. Vernon, Kelso	..	..	..	..	..
263.	William Layton, M.A., High School, Kelso	..	..	..	..	..
264.	William Gunn, F.G.S., Geological Survey, Berwick	..	..	..	..	..

265. Rev. F. B. Nunneley, M.D., Rennington, Chathill ...	Oct. 15, 1879.
266. Rev. Thomas Calvert, M.A., 92, Lansdowne Place, Brighton	" "
267. Rev. George Gunn, Stichell, Kelso	" "
268. Patrick Kynock, M.D., Greenlaw	" "
269. George Anderson, Selkirk	" "
270. Thomas Craig-Brown, Woodburn, Selkirk	" "
271. Ralph Dunn, Solicitor, Melrose	" "
272. Thomas Fairley, Academy, Galashiels	" "
273. Robert Darling Ker, St. Leonard's House, Edinburgh	" "
274. Hume Nisbet, Studio, Albert Buildings, 6, Shandwick Place, Edinburgh	" "
275. Rev. Robert Small, Caddonfoot, Galashiels	" "
276. Frank Rutherford, Bank of Scotland, Galashiels	" "
277. Rev. A. Duncombe Shafto, M.A., Brancepeth Rec- tory, Durham	" "
278. J. J. Vernon, F.S.A. Scot., Hawick	" "
279. Robert Henry Elliot, Clifton Park, Kelso ..	" "
280. J. W. Barnes, Banker, Durham	" "
281. George Bolam, Berwick	" "
282. Rev. Thomas S. Marjoribanks, Prestonkirk, East Lothian	" "
283. Rev. James King, B.A., Vicar of St. Mary's, Berwick	" "
284. James Bogie, 5 Spence Street, Newington, Edinburgh	" "
285. Francis D. Blake, Tillmouth Park, Coldstream	" "
286. Andrew P. Aitken, M.A., Dr. Sc., etc., Chemist to the Highland and Agricultural Society of Scotland, Nivelle Cottage, Liberton, Edinburgh	" "
287. James Thomas Spencer Elliot, yr. of Wolfelee	" "
288. Thomas Rutherford, M.D., Kelso	" "
289. John Crawford Hodgson, Buston Vale, Lesbury ...	Oct. 13, 1880.
290. John Sadler, Curator, Royal Botanic Garden, Edin- burgh	" "
291. Walter Grieve, Cattleshiels, Dunse	" "
292. Rev. Alex. Phimister, M.A., Gordon	" "
293. J. Gordon Maitland, Advocate, Procurator-Fiscal, Dunse	" "
294. Rev. Duncan Maclean, B.D., Allanton	" "
295. James Fergusson, St. George's Presbyterian School, Morpeth	" "
296. Rev. James Spence, Ladhope, Galashiels	" "
297. John Broadway, Banker, Alnwick	" "
298. Alexander Dickson, M.D., F.R.S.E., F.L.S., Professor of Botany in the University of Edinburgh	" "
299. Major Shallcross Fitzherbert Widdrington, Newton Hall, Alnwick	" "
300. Rev. William Snodgrass, D.D., Canonbie, Dumfries- shire	" "
301. Rev. Charles J. Cowan, B.D., F.S.A. Scot., Morebattle, Kelso	" "

302.	Rev. Thomas Ilderton, M.A., Ilderton, Alnwick	...	Oct. 13, 1880,
303.	Edwin Thew, M.D., Alnwick	... ..	" "
304.	Thomas Walby, Alnwick	... ..	" "
305.	William Newton Morrison, Low Stead, Lesbury	... ..	" "
306.	William Alder, Berwick	... ..	" "
307.	Robert Weddell, Solicitor, Berwick	... ..	" "
308.	The Right Hon. Lord Napier and Ettrick, K.T., Thirlestane Castle, Selkirkshire	... ..	Oct. 12, 1881.
309.	William Craig, M.D., C.M., F.R.C.S.E., F.R.S.E., 7, Lothian Road and Surgeon's Hall, Edinburgh	... ..	" "
310.	Robert Hutchison, F.R.S.E., F.S.A. Scot., Carlowrie, Kirkliston, and 29, Chester Street, Edinburgh	... ..	" "
311.	James S. Mack, S.S.C., Coveyheugh, Reston	... ..	" "
312.	Rev. George Marjoribanks, B.D., Stenton, Prestonkirk	... ..	" "
313.	The Most Hon. the Marquess of Tweeddale, Yester House, Haddington	... ..	" "
314.	John H. F. K. Scott of Gala, Gala House, Galashiels	... ..	" "
315.	Rev. C. E. Bowden, M.A., St. Columba's Church, Edinburgh	... ..	" "
316.	Edward Johnson, M.D., Tweedbank, Kelso	... ..	" "
317.	Rev. John Orr, B.A., Berwick	... ..	" "
318.	R. P. Brotherston, Tynningham Gardens, Prestonkirk	... ..	" "
319.	Edward Willoby, junr., Berwick	... ..	" "
320.	Joseph Wilson, Solicitor, Dunse	... ..	" "
321.	William Madden, British Linen Co's. Bank, Berwick	... ..	" "
322.	Rev. James Beale, The Parsonage, Dunse	... ..	" "
323.	William Thompson Hall, Dunns Houses, Woodburn	... ..	" "
324.	Hugh Miller, F.G.S., of the Ordnance Survey, Elsdon	... ..	" "
325.	James Leslie Newbigin, Alnwick	... ..	" "
326.	George Bird, 12 Warrender Park, Edinburgh	... ..	" "
327.	Rev. A. B. Coulson, B.A., Carham	... ..	" "
328.	John Dobie, M.A., B.D., Ladykirk	... ..	" "
329.	James Cumming, Banker, Jedburgh	... ..	" "
330.	T. D. Crichton Smith, Solicitor, Kelso	... ..	" "
331.	Ephraim Arkle, Carrick, Elsdon	... ..	" "
332.	Dr. Tennant, Melrose	... ..	" "
333.	Dr. Weight, Melrose	... ..	" "
334.	John Henderson Wright, M.B.C.M., Kelso	... ..	" "
335.	Rev. James Boyd, Innerleithen	... ..	" "
336.	Richard Lees, Solicitor, Galashiels	... ..	" "
337.	Edward Tennant, yr. of The Glen, Innerleithen	... ..	" "
338.	Stevenson Macadam, Ph.D., F.R.S.E., Lecturer on Chemistry, Surgeon's Hall, Edinburgh; 11, East Brighton Crescent, Portobello	... ..	" "
339.	Hon. H. C. Maxwell Stuart, Traquair House, Inner- leithen	... ..	" "
340.	Adam Darling, Governor's House, Berwick	... ..	" "
341.	A. L. Miller, Berwick	... ..	" "

342. Thomas Frazer, M.D., Berwick	..	..	Oct. 12, 1881.
343. Dr. Heagerty, Tweedmouth	..	..	„ „

HONORARY MEMBERS.

The Lady A. A. John Scott of Spottiswoode, Lauder.

Mrs. Spoor, Tosti, Falsgrave, Scarborough.

Mrs. Barwell Carter, The Anchorage, Berwick.

Miss Margaret R. Dickinson, Norham.

Miss Langlands, 5, Strathearn Place, Edinburgh.

Miss Russell of Ashiesteel, Galashiels.

Mrs. Robert Middlemas, Alnwick.

CORRESPONDING MEMBERS.

William Shaw, Literary and Scientific Institute, Berwick.

John Anderson, Preston, Dunse.

Thomas Henry Gibb, Alnwick.

Andrew Brotherston, Shedden Park Road, Kelso.

Robert Renton, Fans, Earlston.

OFFICERS OF THE CLUB.

FRANCIS DOUGLAS, M.D., Kelso	} <i>Secretaries.</i>
JAMES HARDY, Oldcambus, Cockburnspath.	
ROBERT MIDDLEMAS, Alnwick, <i>Treasurer.</i>	

INDEX OF BIRDS.

- Auk, Great,** 222.
Bittern, Common, 253.
Blackbird, 12, 30, 34, 123-6, 130-1, 134, 136, 140, 143, 147, 149, 150, 220, 305, 327, 329, 332, 339, 392, 410, 429, 499, 500-1, 504, 554, 571.
Black Cock, 469, 488.
Brambling, *see* Finch, Mountain.
Bullfinch, 149, 220, 230, 488, 504.
Bunting, Black-headed or Reed, 130, 230, 504.
 — **Common or Corn,** 31, 126, 127, 230, 504.
 — **Snow,** 123, 125, 127, 404, 499, 500, 554.
Buzzard, Common, 254, 408, 488, 489, 503, 562.
 — **Honey,** 165, 254, 408, 409.
 — **Rough-legged,** 284, 488, 562.
Chaffinch, 125, 126, 131, 149, 150, 339, 500, 504, 563.
Chiff-chaff, 390, 555.
Chough or Red-legged Crow, 488.
Coot, 220, 391, 488, 499, 553.
Cormorant, Common, 37, 389, 552.
Crake, Corn, or Landrail, 135, 150, 399, 429, 488, 505, 558.
Cranes, 519.
Creeper, 130, 488, 504, 553.
Crossbill, 488.
Crow, Carrion, 124, 126, 220, 504, 505-6
 — **Hooded,** 20, 126, 404, 504, 562.
Cuckoo, 130, 135, 150, 220, 228, 305, 399, 409, 429, 504, 558.
Cushat, *see* Wood-Pigeon.
Curlew, 125-9, 220, 234, 388, 474, 488, 503, 551.
Dabchick, *see* Grebe, Little.
Dipper, 123, 135, 220, 261, 392, 429, 504.
Diver, Black-throated, 367, 501.
 — **Great Northern,** 407.
 — **Red-throated,** 170, 366, 501.
Dotterel, 18, 136, 400, 588.
Duck, Common Wild or Mallard, 123, 126-9, 143, 147, 149, 219, 220, 390, 428, 499, 505, 552.
 — **Eider,** 125, 129, 143, 552.
 — **Golden Eye,** 407, 488, 505, 562.
 — **King,** 409.
 — **Long-tailed,** 562.
 — **Pintail,** 462.
 — **Pochard,** 365, 505.
 — **Scaup,** 143.
 — **Shoveller,** 230, 552.
 — **Teal,** 488.
 — **Tufted,** 176.
 — **Wigeon,** 230, 562.
Dunlin, 166.
Falcon, Peregrine, 18, 135, 175, 183, 365, 387, 488.
 — **Red-footed,** 365.
Fieldfare, 123-131, 134, 143, 305, 329, 332, 402, 504, 561.
Finch, Mountain, or Brambling, 124, 499, 504, 555.
Flycatcher, Pied, 54, 165, 440, 560.
 — **Spotted or Grey,** 12, 131, 150, 220, 400, 504, 560.
Goatsucker, or Night Jar, 400, 505, 560.
Godwit, Common, 356, 360.
Goldfinch, 230.
Goosander, or Dundiver, 134, 253, 366, 407, 463, 552.
Goose, Bean, 505.
 — **Bernicle,** 366, 552.
 — **Brent,** 401, 402, 552.
 — **Egyptian,** 177, 552.

- Grey, 401.
 — Pink-footed, 366, 505.
 — Wild, 123, 139, 401, 551,
 Grebes, 499, 501.
 Grebe, Eared, 391.
 — Great Crested, 391, 552.
 — Red-necked, 367, 391, 501.
 — Little, 339, 407, 488, 505.
 — Slavonian, 391.
 Greenfinch, 124, 125, 131, 149, 151,
 305, 504.
 Greenshank, 361, 362, 561.
 Grouse, Red, 129, 220, 440, 488.
 Guillemot, Common, 394.
 Gull, Black-headed, 31, 125-6, 225,
 236, 241-2, 401, 505, 554.
 — Common, 126-7, 505.
 — Glaucous, 170.
 — Great Black-backed, 126.
 — Herring, 488, 505.
 — Kittiwake, 398.
 — Little, 367.
 — Masked, 177, 225.
 Gulls, 499.
 Hawfinch, 405.
 Hedge Sparrow, 127, 131, 305, 504.
 Heron, Common, 38, 135, 220, 389,
 429, 501, 505, 551.
 Hobby, 30, 175.
 Hoopoe, 165, 402.
 Jackdaw, 127, 504.
 Jay, 150, 382, 429.
 Kestrel, 125, 220, 488, 503.
 Kingfisher, 20, 230, 254, 429, 489.
 Knot, 562.
 Landrail, *see* Corn Crake.
 Lapwing, 32, 38, 123, 125-9, 134,
 217, 220, 389, 474, 488, 503, 505,
 550.
 Lark Shore, 408.
 — Sky, 32, 126-7, 129, 131, 143,
 151, 229, 234, 244, 271, 305, 403,
 453, 499, 500, 504.
 Linnet, Grey, 123-4, 128-9, 131, 151,
 220, 408, 439, 498, 504, 562.
 — Redpoll, 151, 561.
 Magpie, 242, 476, 488, 504, 506.
 Martin, Common, 130-1, 135, 397,
 409, 505, 556.
 — Sand or Bank, 31, 130, 135,
 150, 261, 394, 409, 429, 453, 505,
 556.
 Merganser, 501.
 Merlin, 284, 488, 503, 562.
 Missel Thrush, 20, 124, 126-7, 130-1,
 150, 305, 332, 389, 501, 504, 554.
 Night Jar, *see* Goatsucker.
 Oriole, Golden, 563.
 Osprey, 489, 562.
 Ousel, Ring, 129, 220, 397, 404, 429,
 488, 504, 554.
 Owl, Barn or White, 365, 429, 504.
 — Brown, Tawny, or Screech, 135,
 231, 329, 365, 429, 488, 504.
 — Long-eared or Horned, 428,
 488, 504.
 — Short-eared, 406, 504, 562.
 Oyster-Catcher, 365-6.
 Pallas's Sand-grouse, 247.
 Partridge, 126, 147, 305, 329, 488,
 499, 505.
 Petrel, Fulmar, 170.
 — Leach's, or Fork-tailed, 177.
 — Stormy, 356.
 Phalarope, Grey, 169.
 Pheasant, 247, 329, 488, 505, 563.
 Pipit Meadow or Moor, 130, 220, 399,
 429, 453, 488, 499, 504, 553.
 — Rock or Sea, 123, 126, 127,
 130, 392.
 — Tree, 10, 151, 284, 400, 504,
 533.
 Plover, Green, *see* Lapwing.
 — Grey, 134, 365.
 — Golden, 38, 125-7, 134, 220,
 406, 488, 505, 550, 551.
 — Ringed, 143.
 Puffin, 398.
 Rail, Water, 253, 488, 558.
 Raven, 125, 389, 453, 489.
 Razor-bill, 126, 177, 389.
 Redbreast, 12, 123-4, 128, 130-1,
 149, 150, 220, 329, 340, 498, 504.
 Redshank, 123, 125-7, 129, 143, 390,
 551.
 — Spotted, 360-1.
 Redstart, 131, 135, 150, 220, 393, 493,
 504, 556, 559.
 Redwing, 124, 126, 129, 130-1, 134,
 143, 332, 403, 500, 504, 561.
 Ring-Dove, *see* Wood-Pigeon.
 Ring-Dotterel, *see* Plover, Ringed.
 Rock-Dove, 126, 130.
 Rook, 11, 12, 26, 125, 127, 134, 221,
 249, 265, 329, 382, 428, 499, 500,
 504, 506.
 Ruff, 168, 562.
 Sanderling, 363-4, 401.
 Sandpiper, Bertram's, 167-8.
 — Common, 150, 220, 400, 488,
 505, 560.
 — Green, 169, 362, 401, 488.
 — Purple, 385.
 — Wood, 362.
 Scoter, Velvet, 170.
 Shelldrake, 366.

- Shrike, Grey, 365, 405, 562.
 Shrike Red-Backed, 165, 176.
 Shearwater, Greater, 368.
 Siskin, 230, 407, 561.
 Skua, Buffon's, 54, 169, 368.
 — Common, 367.
 — Pomarine or Pomatorine, 54, 169, 176, 367, 552.
 Skua Richardson's, 355-6, 552.
 Skua-Gulls, 406, 552.
 Skylark, *see* Lark (Sky).
 Smew, 253.
 Snipe, Common, 147, 488, 498, 505.
 — Great, 401, 463.
 — Jack, 505.
 — Russet, 176.
 — Subine's, 166.
 Solan-Goose or Gannet, 130, 143, 367, 399.
 Sparrow-hawk, 488, 503.
 Sparrow, Common, 130-1, 149, 305, 407, 504.
 Starling, 32, 124-7, 149, 230, 305, 339, 387, 504, 506, 554, 561.
 Stock-Dove, 18, 151, 165-6, 562.
 Stone-chat, 131, 230, 284, 393, 555.
 Storms, 519.
 Swallow, 130-1, 135, 143, 150, 230, 395-6, 409, 410, 429, 495, 504, 557-8.
 Swan, Polish, 32.
 — Wild, 230, 463, 550.
 Swift, 131, 135, 150, 230, 397, 504, 558.
 Tern, Arctic, 367.
 — Common, 367.
 — Sandwich, 400.
 Thrush, Song, 12, 20, 34, 123-131, 134, 136, 140, 143, 147, 149, 150, 220, 305-6, 327, 329, 332, 339, 340, 387, 392, 410, 429, 498-9, 500, 504, 554, 571.
 Titmice, 130, 131, 149, 305, 329, 504.
 Titmouse, Cole, 220, 284, 488.
 — Greater, 126, 129, 130, 220.
 — Long-Tailed, 134, 253, 284.
 — Marsh, 284, 563.
 — Ox-Eye, 125-7, 129, 157, 284, 488.
 Turnstone, 387.
 Turtle-Dove, 30, 365, 402.
 Wagtail, Grey, 11, 123, 129, 131, 284, 305, 389, 428, 504, 553.
 — Pied, 127, 129, 130, 220, 261, 278, 305, 389, 428, 453, 498-9, 504, 553.
 — White, 553.
 — Yellow, 391.
 Warbler, Black-cap, 10, 130-1, 220, 400, 428, 443, 493, 504, 559.
 — Chiff-chaff, *see* Chiff-chaff.
 — Sedge, 131, 220, 229, 394, 443, 446, 504, 560.
 — Willow, 10, 130, 135, 220, 394, 400, 410, 429, 469, 504, 555.
 — Wood, or Wood-Wren, 23, 130-1, 220-1, 469, 504, 559.
 — Garden, 398, 504, 556.
 Water-Crow, *see* Dipper.
 Water-Hen or Gallinule, 126-7, 219, 220, 305, 389, 428, 499, 505, 553, 571.
 Waxwing-Bohemian, 408.
 Wheat-ear, 129-131, 150, 220, 284, 392, 453, 474, 504, 555.
 Whin-Chat, 130, 215, 230, 234, 284, 393, 474, 504, 555.
 White-Throat, Greater, 130-1, 220, 397, 400, 410, 469, 504, 556, 559.
 — Lesser, 400, 562.
 Woodcock, 126, 147, 247, 399, 429, 469, 488, 505, 560.
 Woodpecker, Green, 441, 562.
 — Greater-spotted, 429, 441, 562.
 — Lesser-spotted, 463.
 Wood-Pigeon, 48, 123-5, 134, 147, 220, 308, 329, 382, 406, 429, 499, 500, 505, 550, 571.
 Wren, Common, 20, 123, 125, 129-131, 149, 150, 220, 305, 329, 408, 469, 488, 504, 553.
 — Golden-Crested (*see* Golden-Crest), 129, 131, 230, 407, 488, 504, 553.
 Yellow-Hammer, 131, 157, 388, 504.

I N D E X.

- Abbey, Cliphope Burn, 115-6.
 Abraxas Ulmata, 280.
 Acacias, 426.
 Accounts, 207, 412, 576.
 Acherontia Atropos, 178, 379, 383, 478.
 Adamson, C.M., Scraps relating to Natural History in North Northumberland, 353, etc.
 Adders or Vipers, 231, 250, 429, 443, 473-4.
 Addison, Dr. Thomas, 277.
 Adelges Abietis and Laricis, 370; Piceæ, 477.
 Ægeria exitiosa and polistiformis, 372-3.
 Agate, 478.
 Agrimonia odorata, 187.
 Aidan, Bp. of Lindisfarne, 59.
 Albinism, produced by cold, 502.
 Alexander, W.M., Effects of Winter 1879-80, 316,
 Allium Schoenoprasum, 186.
 All-Saints' Day, 511.
 Alluvium, 526.
 Alnmouth Meeting, 31; Bridge, 31; Town, 32.
 Alnwick, Meeting at, 40; Effects of Winter, 1878-79, 1879-80, at, 145, and 324-5.
 Altars, Roman, 271, 273, 277, 278, 459, 461, 462, 541.
 Alpine Hare in Storm, 502.
 Amber Bead, 97.
 Amperley, 16.
 Anacharis alsinastrium, 449, 476.
 Anchusa sempervirens, 20.
 Ancient Monuments, Preservation of, 212-3.
 Ancroft, and its Cloggers and the Plague, 253.
 Animals, figures of in valley of Mississippi, 518.
 Anne, Queen, Letter of, 45.
 Annelide marks, 479.
 Anniversary Addresses, 1, 211, 415.
 Antiquities found, 14, 17, 18, 19, 34, 35, 44, 49, 53, 56, 96, 97, 100, 101, 217, 242, 243-4, 247, 251-2, 303, 386, 438, 444-5, 543-4-5-6.
 Aphides, 369.
 Aphis Grossulariæ, 228, 369.
 Aphis of the Beech, its History and Damage by, 47, 48.
 Arabis trifoliata, 28.
 Aragon, Coin of King of, 7.
 Araucaria imbricata, measurement of at Dunse Castle, 380; at Rowchester, 548.
 Archbishop Hamilton's Catechism, 483.
 Archæological and Architectural Society of Dur. and Northd., meeting with, 49, 57, etc.
 Arkle, Thomas, The Keyheugh and its Wishing Well, 392; on the Mote Hills at Eldsdon, 459-60, 538-542; on three Barrows in Redesdale, 472-3.
 Armlet of glass, 97.
 Arrival and Departure of Birds, 387-410, 549-563.
 Arrow heads, etc., of Flint, Bone, Copper, 53, 54, 243.
 Arthur, King, and Image of the Virgin at Stow, 546.
 Arvicola amphibia, albino of, 441.
 Arvicola glareola, 127, 138.
 Ashes, large, 427.
 Ashiesteel, Winter 1879-80, at, 351; Antiquities at, 386; Haugh and Hill, 479.

- Asplenium Ruta-muraria**, 276.
 ——— septentrionale, 245.
Aswamedha or Sacrifice of a Horse in India, 513-4, 522.
Avenel, 237.
Ayton Castle, Siege of, and Church, 162.
Ayton Castle Gardens, Winter 1878-9, 1879-80, at, 136 and 309.
Ayton, Lepidoptera found at, 368.
Badger, 222, 242, 252, 427.
Baillie, Lady Grizel, 47.
Baillies of Lochend, 215.
Baird, Rev. Andrew, 416; Dr. William, 420.
Bakstanedean, oldest name of Bassendean, 233.
Balden, John, on Winter 1878-9, 336.
Baldmoney, 30.
Balfour, Prof. J.H., 1, 6.
Ball in Mythological Tales, 518-9.
Bamburgh, 62, 63; its Chapels and Church, 246.
Banna, Roman Hunters of, 272, 277.
Bannatyne Club, 192.
Barbustellus communis, 441.
Barnhill, Winter 1879-80, at, 329.
Barrington, Bishop of Durham, 78.
Barrows or Tombs on Watling St., in Redesdale, 471-2.
Bassendean, Church, 233; Tombstone of a General Leslie at, 233-4; Covenanting Laird of, 234; House, 234-5.
Beadnell Chapel, 246.
Bed of Sir Patrick Hume, 45.
Beda, Notice of, 61-62.
Beeches, 26 etc., 426, 430.
Bek, Bishop of Durham, 50, 76, 78.
Belford Meeting, 244; Church and Chapel, 245-6, 249; Lords of the Manor, 246; Castle and Hall, 247; Crag, 249; St. Mary's Well, 250; Old State of Town, 253; Tradition of Plague at, 253.
Belhaven, John, second Lord, his dislike to the Union, 434; Tombs of him and others of the family, 439.
Belted Will's Oak, 276; Tower, 281; Name, 282.
Belton House, Woods, Trees, and Dean, 425-430.
Bennet, Sir Gilbert of Marlefield, 24, 25, 27.
Bennet, Sir William of Marlefield, 23, 24.
Berkshire White-Horse, 518-9, 520.
Bernician series of Rocks, 527; Upper and Lower, 527-9.
Berrington, Prior of Durham, 70.
Berwick, ancient, view of, 287; Coins at, 7; Gascons at, 8; Sack of King Edward I., 117; Effects of Winters 1878-9, 1879-80, at, 142, 320.
Berwick, Meetings at, 6, 50, 286, 492.
Berwickshire Naturalists' Club, its origin, influence, and contributions to Science and Literature, 416, etc.; Jubilee Meeting, 416, 442.
Bewcastle, whence its name, 279; Inscription in Runes near, 278.
Bibles, old, 44, 45, 225, 431, 483.
Bibliographical List of the Publications of James Maidment, Esq., 196-204.
Bibliographical Notices, Books, rare MSS., and Libraries, 44, 45, 51, 60; 194-5, 196-204, 245, 251, 279, 280, 300, 431, 483, 484.
Biddleston, Effects of Winter 1879-80, at, 327.
Biel, Policies, Grounds, and Mansion, 430-437; House, list of best Pictures and Statues at, 433; State papers at, 433; Ornamental Shrubs and Coniferæ 434-6.
Bigge, Rev. J. F., Notice of Squirrels colonizing a district, 100; on Effects of Winter, 1878-9, 149; Arrivals of Birds at Stamfordham, 150.
Bingfield, Winter 1879-80, at, 339.
Birdoswald, Roman Station and Remains at, 272, etc.
Birds, *see* Index of Birds.
Birds of Thurston and Woodhall, 220; of Gordon, 229-230, 235; of Fowberry, 253-4; of Gilsland, 284; at Belton and Biel, 428-9; of Peeblesshire, list of, 488-9; found near Presmennan Loch, 503, etc.
Birds and other Animals, Effects of severe Winters, on, 123-133, 134, 135, 140, 142, 143, 147, 148, 149, 150-1, 154-5, 157, 305, 306-7, 308, 327, 329, 332, 339, 340, 498-503.
Birds, Migration of, on the Borders, 387-410; 549-563.

- Birgham lands, 162.
 Birle Tree and Court at Belton, 427.
 Blackadder House, Effects of Frost, at, 307; Plants killed and injured at, 309.
 Black Jack, 44.
 Black Lough, 219.
 Black Stitchel, 528.
 Blaiklaw and Pringle the Poet, 30.
 Boar's Loch and its Legend, 220.
 Boars, bones of, 74, 541.
 Bolam, George, Effects of Winter 1878-9, 142; Ornithological Notes, 165-170.
 Bold, West, Lead Mines at, 481.
 Bones and Skeletons at Elsdon, 456, 506, etc.; at Ladykirk, 457; at Gordon and Newminster, 457.
 Boon, Slaughter of the Laird of, 240-1.
 Boonsley, 221.
 Borthwick Church, fragments of Old Cross at, 546.
 Bosanquet, C. B. P., on Winters of, 1878-9, 1879-80, 147, 324.
 Boston, Rev. Thomas, Handwriting of, 222.
 Botanical Notices, 9, 10, 11, 12, 16, 17, 20, 26, 28, 32, 36, 37, 39, 49, 214, 215, 219, 220, 221, 225, 229, 233, 235, 243, 245, 248, 251, 255, 259, 261, 263, 264, 267, 271, 275, 276, 278, 279, 280, 281, 284, 288, 293-4, 417, 426, 429, 430, 431, 436-7, 444-450, 461, 462, 468, 471, 475-7, 480, 493, 537-538, 542.
 Bothwell's Plot at Spott House, 216.
 Boulder at Marchmont, 48; at Cockburn Law, 99; at Willowford, 271.
 Boulder Clay, 527.
 Boulmer, 32, 38.
 Bow and arrow, training practice, 456.
 Bowden, services of husbandmen of, 231.
 Bowie, Robert, Effects of Winter, 1878-9, (144); 1879-80, at Chillingham, 144, 322-3.
 Bowhill, Winter Temperatures at, 156, 349, 566.
 Bowmont Forest, Winter 1879-80, at, 344.
 Boyd, W. B., on Effects of Winters 1878-79, and 1879-80, at Ormiston House, 154, 344-5.
 Brass pots at Greenwood Moss, and Ecklaw, 18; at Thurston Mains, 221; Newham, 252; at Langhope, Selkirkshire, 303; near Edmonston, Biggar, 491.
 Bremenium, Roman city at, 470-1.
 Brencburn Priory, Winter 1879-80, at, 328.
 Britain, the Island of Souls, 522.
 British Camps, Dwellings, etc., 17, 38, 39, 84, 96, 109, 110, 113, 114, 120, 185-8, 190, 216-7, 242, 249, 250, 438, 444, 452, 461, 463, 464, 466, 476, 481, 482, 489, 490.
 British Coins, 516, 520.
 Brochs, Notices of, 98, 99.
 Brock or Spott Water, 215.
 Brockholes, Bronze Caldron found on, 17.
 Bromfield, Rev. Robt. O., Obituary Notice of, 288-9.
 Bronze and Brass articles; Brazier, 28; Buckle and Thimble, 97; Caldrons, 17; Celt from Hoselaw, 19; from Holburn, 252; from Morebattle, 275; bronze or brass Spurs at Belford, 247; vessels and weapons, 466-7.
 Broomhouse, Easter and Wester, 214-5, 218.
 Brotherston, A., on Winter 1878-9, 153; Ornithological and other Notes, 1879-80, 175; Sea Trout or Common Trout, the Carham Pond Experiments, 179; Plants found at Gordon, 294.
 Brotherston, R. P., on Winters, 1878-9, 1879-80, at Tynningham, 142, 318.
 Brown, Capability, 453.
 Brown, Rev. Thomas, F.R.S.E., Anniversary Address, 415-424.
 Bruce, Rev. J. C., LL.D., on the Roman Wall at Birdoswald, 272, etc.; on Winter, 1878-9 on Tyne-side, 337.
 Bruce, King Robert, at Lanercost, 279.
 Brudenell, Mrs. of Hebburn, 184.
 Brunt Wood, 219; Mill, 221.
 Bueth, Gilles, Lord of Gilsland, slain, 278-9.
 Buglas, S., Lepidoptera captured at Ayton, 368.
 Bull, Oblation of a, to St Cuthbert, 457.
 Bullets, Stone, 244; Iron, 251.
 Burning iron for thieves, 224.

- Burns, Robert, some MSS. of his, 51;
Visit to Wardrew, 285.
- Burnmouth, in Ettrick Forest, 193.
[“Hindhop Burnemuthe in his
New Forest,” Skene’s Celtic Scot-
land, iii. p. 444, who also confounds
it with the modern fishing village
of Burnmouth.]
- Bush aboon Traquair, 487.
- Butler, Bp. of Durham, 79.
- Caddon Bank, 481.
- Cadogan, C. H., on Winter 1879-80,
328.
- Caerlee or Curly Bank, 481, 489.
- Cairns, John, on Winters 1878-9, and
1879-80, 138, 311.
- Cairns, at Otterburn, 469; at
Annan’s Treat on Yarrow, 485; of
Peeblesshire, 490.
- Castron or Kestern, the old Owners
of, 258-9.
- Calc-tuff, 526.
- Calcareous Sandstone, 527.
- Calderwood, Rev. Wm., tomb of,
238-9.
- Cameron, Mr Richard, 22.
- Camps, *see* British Camps.
- Carboniferous Rocks, 527.
- Carham Hall Experiments, 179.
- Carilef or Karileph, St., William of,
Bp. of Durham, 64-6, 73, 74, 77.
- Carlisle, Earls of, 277, 281.
- Carr-Ellison, Ralph, Effects of Win-
ters, 1878-9, 1879-80, 150, 330.
- Carrick, Margaret, of Mumps’ Ha,
269, 286.
- Carriden, Linlithgowshire, Caer-
Edin, 83.
- Carthaginian coin with horse-head,
518.
- Castell, Prior of Durham, 70, 71.
- Castleton; 117.
- Catin composition of place-names, 116.
- Caterpillar of Apricot stem and
branches 371.
- Catrail or Picts-Work Ditch in 1880,
105-122; Literature of, 105-8;
Illustrations of, 440.
- Cavers, Remarkable Trees at, 381.
- Cedar of Lebanon at Biel, 435.
- Celtic cross at Innerleithen, 482.
- Celts, Bronze, 19, 252, 275; Stone,
19, 32, 40, 53, 466-7.
- Cessford Castle, 27.
- Chaffinch feeding on Haws, 563.
- Chalcididae, List of, 297-8.
- Charles V., the Emperor and Joanna,
Coin of, 352.
- Charles the Pretender, 45.
- Chambers, Dr William, on the
Camps of Peebleshire, 489, 490.
- Chartres, Wm., Obituary Notice of,
290.
- Chermes Abietis and Laricis, 370.
- Chermes Piceæ, 477.
- Chester-le-Street, 63.
- Chesters, Tyneside, Winter 1879-80
at, 337.
- Chesters Hill and Camp, E.L., 217.
- Cheviots the, and Cushat Law, 453.
- Chevy Chase, Ballad of, 466.
- Chillingham Castle, Winters 1878-79,
1879-80, at, 144, 322, etc.
- Chirnside and Vicinity, Winters,
1878-9, 1879-80 at, 133, 305, etc.
- Cholera outbreak of, 422.
- Cist at Holburn, 252.
- Clay, John, Obituary Notice of, 55.
- Cleland, Col., his Sword, 225.
- Cleugh, James, on Winter 1878-9, 147.
- Cliphope, 115.
- Coal-carrying on ponies, 116.
- Coals. workable in Redesdale, 529-30.
- Coccus Fagi, 48.
- Cochrane, Grizel, 237; tomb of, 238.
- Cocidius, altar to, 277.
- Cockburn Law, Notice of, 84;
Weather proverb about, 444.
- Cockburnspath Tower, Notice of, 446.
- Coins and Medals, 7, 8, 243, 244, 303,
352, 466, 471, 472, 493, 516-9.
- Colias Edusa, Occurrence of, 353, 383.
- Coldstream, Winter 1878-9, and
1879-80, at, 139, 322-3.
- Collingwood, F. J. W., Rainfall at
Glantou Pyke, 207, 413, 571.
- Collingwood House, Morpeth, 255.
- Collingwood, Lord, Thanks to his
Officers, etc., after Battle of Tra-
falgur, 287.
- Columba cenae, Occurrence of, 18,
165, 562.
- Columba, St, 58, 59.
- Colwell Hill, Camp at, 461.
- Conifers, Ornamental, 36, 37, 43,
135-8, 145-8, 154, 248, 380, 435-6,
548-9, 567.
- Coombe Crag, Roman Quarries and
Inscriptions, at, 274.
- Co-operation of Naturalists’ Clubs,
563, etc.
- Coppin, John, Winter 1879-80, 339.
- Cornoioi, Lewis de, 16.
- Carsbie Bog, its physical features,
Botany and Geology, 234-5;
Tower, 237.

- Cosin, Bishop of Durham, 71, 77, 78.
 Cottenshope, 458.
 Coupland Castle, Winters 1878-9,
 and 1879-80, at, 145, 321.
 Court-Leet of Redesdale, 542.
 Covenanting Banners and Arms, 23,
 222, 223, 225.
 Coveyheugh House, 9.
 Coxon Mr, Winter 1878-9, and 1879-
 80, 148, 324.
 Cradil of Mons Meg, 161, 163-4.
 Craig-Brown, T., Remarks on Wal-
 lace's Trench, 178.
 Cranstouns of Corsbie, Thirlestane
 Mains, and Morriestoun, 237,
 240-1.
 Cranstoun, John, Slaughter of, 240.
 Cross on farm of Boon, 241; at
 Lanercost, 278; at Innerleithen
 and Borthwick, 545; Sanctuary
 Crosses, 546.
 Crosbie, Alexander, M.D., Obituary
 Notice of, 289.
 Crossling, John, Winter 1879-80, 328.
 Crossman, M. G., The Gainslaw
 Hollies, 380.
 Cromwell (O.) sleeps at Spott House,
 216; Tradition of, 234.
 Crow Tree, 27.
 Cuckoo Story, 228.
 Cuckoo Spit, 374.
 Culley, George, on Winters 1878-9,
 1879-80, 146, 322.
 Culley, M. T., on Winters 1878-9,
 1879-80, 145, 321.
 Culross, Bible of Abbey of, 483.
 Cumin, Robert de, at Durham, 74.
 Cunningham, William, on Winters,
 1878-9, 1879-80, 139, 322-3.
 Cuthbert St., Notice of, 59, 61;
 his Coffin, 61; Shrine, 67; his
 Amianthine Robe, 266; Churches
 named from and dedicated to, 63,
 455.
 Cynthia Cardui, 21, 374, 383.
 Dacre of Lanercost, 279.
 Dacre, supposed War-Cry of, 283.
 Dalkeith, 164.
 Dand, Rev. James I., on Winter,
 1879-80, 327.
 Danes, Invasions of, 62, 63.
 Darden Pike and Lough, 302, 303, 452.
 Daubenton's Bat, 441.
 David II., at Lanercost, 279.
 Davy Shiels, 464.
 Dawson, Rev. John, Obituary
 Notice of, 55.
 Dawston-rig, 116.
 Deæ Matres, figures of, 273.
 Deas, John, on Winters 1878-9,
 1879-80, 147, 324; Rainfall at
 Lilburn Tower, 207, 413, 571.
 Death's Head Moth, *see* Acherontia
 Atropos.
 Deer, Fallow, at Biel, 430.
 Delphinus Tursio, 478.
 Derry Camp, 250.
 Dial, old Copper at Marchmont, 43;
 Stone at Belton, 429.
 Dickinson, Miss, on Winters, 1878-9,
 1879-80, 143, 320.
 Dickinson, James, on Winter 1879-
 80, 327.
 Dilston Estate, Winter 1879-80, 336.
 Dixon, Abraham, and his son, of
 Belford, 246.
 Dobie, Rev. W., on Skeletons at
 Ladykirk Church, 524.
 Dodd or Spott-Law, 217.
 Dodds Corse Stane, 241.
 Doe-cleuch, 113.
 Dogden Moss and its Gulls, 242.
 Dogs escort Souls, 522.
 Donations of Books, etc., to the Club,
 204. etc.; 410, etc.; 574, etc.
 Doo Wells, 427, 489.
 Doon Hill, Battle of, 215; Witches
 at, 216; Camps at, 216.
 Douglas, Sir Archibald of Spott, 215.
 —, Sir James of Spott, 216.
 Douglas, Charles, M.D., on Winter
 1878-9, 153.
 —, Francis, M.D., on an
 Ancient Phial found at Kelso, 100;
 on Winter, 1879-80, 342.
 Douglas, Lieut. J. H., Obituary No-
 tice of, 54.
 Douglas, Rev. Mr, Galashiels, on the
 Catrail, 106-7.
 Douglas League, 22.
 Douglas Pillar, 465.
 Dowden [not Dowie Den] Moss Loch,
 241.
 Dowie Dens of Yarrow, Scene of, 485.
 Druids of Britain, 521-2.
 Dryden village (near Roslin) its
 Strawberries, 161, 164.
 Dunbar, Meetings at, 214, 425;
 Council Books, 214; first battle of
 at Spott, 216; prisoners of second
 battle at Durham, 71; quarries of
 162, 163; the town in 1789, 291;
 Dunglas, Winter 1878-9, at, 130, 132;
 James VI's visit to, 216.
 Dunse Castle, Araucarias, 380; plants
 in the lake, 477.

- Dunse, Winter 1878-9, at, 136.
 Dunstanburgh Castle, present state of, 440.
 Dunstonhill, Winter 1879-80, 330.
 Durham, Meeting at, 49, etc.; Castle Hall and Sir Walter Scott, 50; Cathedral, History of, 57, etc.; origin of City and Church, 63; Crypt, 66; New Church, 66; Chapter House, 67-8, 75; Galilee, 68, 72, 75; Lady Chapel, 68; Nine Altars, 69, 72; Bishop's Throne, 70; Cloisters, 70; Dormitory, 70; Central Tower, 71; Screen of Shrine, 71; Castle, its History and Architecture, 73; Chapel of, 77; Priory, gift of a War-horse to, 457.
 Dykes of Dolerite, etc., 530.
 Ealdhun or Aldun, Bishop, builds first Cathedral at Durham, 63, 74.
 Earl of Dunbar's Moor, 221.
 Earwigs, 374.
 Easter Festival and Eggs, 511.
 Edgar, called Unniying, 258.
 Edgar of Wedderlie, ring of, 35.
 Egdell, George, on Winter 1879-80, 330.
 Edington, vill of, 259.
 Edin's Hall, on, 81, etc.
 Edward I., at Little Pinkerton, 216; at Wyel, 117; at Newminster, 259; at Lanercost, 279.
 Edward II., at Newminster, 259.
 Edward III., at Newminster, 260.
 Effects of Winter, 1878-9, 1879-80, 1880-1, on the Borders, 122-157, 304-352, 565-571.
 Effects of Winter Storms, November 1880 to March 1881, on Birds and other Animals, 498-503.
 Egelwin, Bishop of Durham, 74.
 Eldin or Ell-docken, 261.
 Eldon, Lord, 255.
 Elfred, the relic collector, 62.
 Elibank Craig, Tower and Wood, 480.
 Elishaw, Hospital and Chapel, 469; Bridge, 470; popular saying about it and its Haugh, 470.
 Elk, bones of, 74.
 Elliot, Sir Walter, F.R.S., on the representation and co-operation of Naturalists' Clubs, 563-5.
 Elliott, Thomas, on Winter 1878-9, 147.
 Elsdon Village and Burn, 454; its Names, 454; Early Notices of, 455; its Church and Monuments, 455-6; Bones and Skeletons found, 456-7, 506-9; Horses' heads in Belfry, 457-8, 510-524; its Mote Hills and Roman Remains, 458-60, 538-542; Rectory House, 461; Geology of, 525-530.
 Encrinites, 38.
 Entomological Notices, 21, 32, 47, 48, 294-296, 296-299, 368, 369-379, 437, 448, 477, 478.
 Eriocampa Caninæ, 373.
 Errata, 209, 414.
 Eslington Park, Winter 1879-80, at, 326.
 Etin and the Red Etin, 83.
 Etin, or Caer Edin, 83.
 Ettrick, Winter 1880-1, at, 566.
 Fairholme of Greenknowe, 232.
 Fairneyside, Field of, exchanged for a Hunting-horse, 55.
 Fairy Knowe at Stenton, 101.
 Fairy Stane at Innerleithen, 482.
 Falstone Dyke, 530.
 Fario, Genus, arrangement of, 180.
 Farms, decrease of at Spott, 217.
 Farquharson, Rev. James, on Effects of Winters, 1878-9, 1879-80, 1880-1; in Selkirkshire, 135, etc., 349. etc., 565, etc.
 Fastcastle, 445.
 Faults, 529-30.
 Fawdon Camp, 462.
 Feen, Caldron of the, or Ossian's, 18.
 Fell and Co., Hexham, on Winter, 1879-80, 333.
 Felton Park, Winter 1879-80, at, 328.
 Ferguson, John, on Winter, 1878-9, 136.
 Ferguson, James, Notice of Rare Books by Morpeth authors, 300, etc.
 Fernery at Belford Hall, 248.
 Field-Clubs, Naturalists', Origin of, 418.
 Filltop Limestone, 79, 80.
 Fish killed by frost, 499.
 Fishes, Notices of, 154-5, 179, 180, 215, 216, 220, 223, 429, 448, 469, 493, 499, 547.
 Flambard, Bishop of Durham, 66, 67, 73, 74.
 Fletcher, Mrs., of Hebburn, 184-5.
 Flint Implements, etc., 53, 102, 104, 243, 467; from Kentucky, 245; from Tent's Moor, Fifeshire, 493.

- Floors Castle and Gardens, Winter 1879-80, at, 343-4; Grounds and Woods, 475.
- Flowers exhibited, 243, 441, 449.
- Folk-Lore, Illustrations of, 12, 18, 24, 27, 35, 99, 101, 215, 216, 220, 224, 228, 231, 234, 285, 444, 454, 465, 470, 478, 482, 489, 510, etc., 540.
- Font River, 262.
- Food of Birds, 11, 284, 368, 387, 389, 392, 398, 401, 404, 406, 407, 408, 428, 505-6, 550, 555, 559, 563.
- Ford Castle, Winter, 1878-9, 1879-80, at, 143, 321.
- Forster, Ralph, of Whitsome Hill, Obituary Notice of, 54.
- Forster, Lady, of Blanchland, 246; Francis, of Easington Grange and Belford, ib.; Elizabeth of Belford, ib.
- Fossils, List of, in Calcareous Shale at Foxton Hall, 79.
- Fossils, 528-9; Plant, 243.
- Fossor, Prior of Durham, 70.
- Fountains Abbey, 256.
- Fowberry Tower, Winters 1878-9, 1879-80, at, 146, 322; Birds at, 253.
- Fowler, Wm., Winter 1879-80, at Mertoun House, 312.
- Foxe, Bishop of Durham, 76, 78.
- Foxton Hall, 32, 79.
- French, Alex., of Thorniedykes, slaughter by, 240-1.
- Frogden, 30.
- Frost in November, 1880, 307; of the last three seasons at Blackadder, 307; great frost of January, 1881, 308; Frost at Monteviot, 1880-81, 569, 570.
- Fulfordlees, lands of, 13.
- Fungi, Notices of, 476, 488, 537-8.
- Fyler, Rev. S. A., Obituary Notice of, 289.
- Gainslaw Hollies, 380.
- Galashiels, Winter 1878-9, at, 157.
- Galena, near Innerleithen, 481; near Elsdon, 529.
- Galfrid or Geoffrey Rufus, Bishop of Durham, 67, 75.
- Galloway Road, 115.
- Galloway, John, Winter 1879-80, at Minto, 348; Remarkable Trees at Minto, Cavers and Wells, 381.
- Gap near Gilsland, 269.
- Gardens and Garden Flowers, and Shrubs, 9, 11, 12, 24, 26, 33, 34, 42, 43, 216, 234-5, 243, 248-9, 251, 265, 282, 426, 433, 434, 435, 441, 449, 475, 477, 487, 566-7, 568.
- Gascon troops at Berwick, 8; defeated at Skaithmuir, ib.
- Gean trees at Traquair House, 485.
- Geddes, Dr Alexander, Notice of his Writings, 486.
- Gemmeous Dragonet, 493.
- General Statement, 207, 412, 576.
- Gentle Shepherd, 25.
- Geological Notices, 10, 11, 12, 38-9, 215, 217, 219, 226, 231, 233, 249, 430, 479, 480, 481, 482, 525-530.
- Geology of Roxburghshire, attention called to, 4, 5.
- Geology of the country round Elsdon, 525-530.
- Gersonfield and the Halls, 462.
- Giant of Edin's Hall, Legend of, 99.
- Gillalees Beacon, a Roman Watch Tower, 274.
- Gilmanscleuch, 112.
- Gilsland Meeting at, 267; Hotel and its outlook, 267; Origin of name, 279; Natural History of, 284; Spa, History of, 284-5.
- Girnwood, 113.
- Gilanton Pyke, Rainfall at, 207, 413, 571.
- Glen, The, Mansion, Grounds, and Garden, 487-8.
- Goat-Fold, 448.
- Gold chain, 217; William Pitt's, 431.
- Gold Rings, 14, 34, 35, 64, 242 (pre-historic), 288.
- Golden Oriole, 563.
- Gordon, Meeting at, 225; Castle, Village, etc., 226; Church and Churchyard and Ministers, 227; Antiquities found under a cairn, 242.
- Gordon Moss, Botany, Ornithology, and Physical features of, 229-231, 292-3.
- Gordon, Alexander, on the Catrail, 105-6.
- Gooseberries in October, 157.
- Gooseberry Caterpillar of Winter Moth, 30, 287; of Saw Fly, 374.
- Gowks of Gordon, 228.
- Gradene, lands, 162.
- Grahamslaw, 21, 25; League a myth, 22; Caves, ib.
- Grain, former scarcity of in Redesdale, 470.
- Grammitis Ceterach, 445.
- Grant's House, Meeting at, 442.

- Graptolites, 480, 481.
- Graves, Ancient, Urns, etc., 15, 23, 24, 242, 250, 252, 438, 469, 472-3, 490; of Bishops of Durham, 64; and tombs at Newminster, and those buried there, 256-9; in churches and congeries of bones and skeletons, 64, 227, 456-7, 506, 509, 524.
- Gray, Robert, F.R.S.E., Notes on Relics of Alex. Wilson, Poet and Ornithologist, 291-2; Ornithological Notes, 365-8; Notes on the Effects of recent Winter Storms on Birds and other Animals, 498-503.
- Greatmoor, 115.
- Green, Rev. J. S., Obituary Notice of, 55.
- Green Camps, 474.
- Greenknowe Tower, its history, 232.
- Greenlaw Church and Meeting at, 48-9; lands, 162.
- Greenwell, Rev. Wm., F.R.S., F.S.A., Address on the History of Durham Cathedral, 57.
- Greenwood Wood, 16; Moss, 17; Caldron and Brass Pots found at, 17, 18.
- Greystocks, Lords of Morpeth, 258.
- Grieston Lead Mine, 481.
- Grymslow, John, 21.
- Hadrian, coin of at Bremenuim, 471.
- Hall, Miss Isobell, 9.
- Hall, Henry of Haugh-head, House of, 22: his Banner and History, 23, 223-4.
- Halls of Newbiggin, 224.
- Hall, Hobbie, of Haugh-head, his monument, 23.
- Hall, Dr Robert [not Richard], 23, 56, 224.
- Hall, Mrs, her Writings, 224.
- Halls woods, 220.
- Halongia from Swinton, 243,
- Hamilton's (Lady Mary Nisbet) Prayer Book at Biel, its history with record of Royal Marriages, etc., 431-2.
- Hamilton and Nisbet family, vault of and monument at Stenton, 439.
- Hammer-stone, 53, 243.
- Hanging Stone at Gordon, 231.
- Haras or Stud of the Umfravilles in Redesdale Forest 448.
- Harbottle, Winter 1879-80, at, 327.
- Hardy, James, Reports of Meetings of the Club, 6-56; 214-290; 425-493; On ancient Interments in a Tumulus near Stenton, E.L., 101, etc.; Effects of Winters 1878-9 and 1879-80, at Oldcambus, etc., 122, etc.; 304, etc.; at Hexham, 335-6; Obituary Notices, 184-195; 288-290; 494-497; List of Chalcididæ, Proctotrupidæ and Mymaridæ from Berwickshire and Newcastle-on-Tyne, 296, etc.; On a Silver Coin of the Emperor Charles V., 352; On the Occurrence of certain Insects in 1880, 369, etc.; The Great Oak at the Oaks near Dalston, 381; Records of the Migration, etc., of Birds, 1880, 387-409; and 1881, 549-563; On a Sculptured Stone at Innerleithen, 545-7.
- Harle, Rev. Jonathan, M.D., some of his Writings, 301-2.
- Harlow Hill, its fossils, 80.
- Harryburn, Winter 1878-9, at, 141.
- Hatfield, Thos. de, Bp. of Durham, 70, 76.
- Hatfield Hall, 76.
- Haughhead Kip, 23; grave at Haughhead, 23.
- Hay-making in Redesdale, 463.
- Hebburn, Estate, Castle, Village, and Wood, 184-5.
- Hector's Peel at Lilliesleaf, 465.
- Hedgeley and Dunston Hill, Winter 1878-9, at, 150, etc.
- Henwood, 112.
- Herb Robert on Roman Stations, 274.
- Hepburn, Archibald, Birds found in the neighbourhood of Presmennan Lake, 503-506.
- Hersell, lands of, 162.
- Hetchester camp on Coquet, 541.
- Hevenfield, battle of, 38.
- Hewitt, James, Winter 1879-80 at Hexham, 224.
- Hexham, Winter 1879-80, at, 333-336.
- Hieracium pallidum, 187.
- High Rochester, *see* Bremenium.
- Highland Invasion of 1745, 217.
- Hillend, Anecdote about a field of, 10; Woods, 15.
- Hilson, John, Winter 1879-80 at Jedburgh, 345.
- Hirsell, Winter 1878-9, 1879-80, at, 138, etc., 311, etc.
- Holland, Major F., on Winter 1879-80 at Alnwick, 325.
- Hollies, 11, 36, 218, 322, 341, 380, 568.
- Hollow-wood, 271.

- Hollybush farm, 109, 110.
 Holy Island Slakes, 354.
 Holylee, 480.
 Holy-water vat, 247.
 Home Castle, 162.
 Home, Cospatrick, 11th Earl of, Obituary Notice of, 494-5.
 Home, David Milne, LL.D., etc.; Notice of Stone Balls found in the Parish of Swinton, 159, etc.; Winter 1879-80, 311.
 Home, David of Wedderburn, 161.
 ——— John, 222.
 Home, Major, J. H. F., of Bassen-dean, Obituary Notice of, 494.
 ——— Patrick, of Fastcastle, 162.
 Hornspoon from Fans Moss, 478.
 Horses, half-wild, 79; horse-heads on skeletons of at Elsdon, 457, 510-524; Alexander I's gift of an Arabian horse to St. Andrews, 457; Neville, Lord of Raby's mortuary gift of a horse, 457; the Umfravilles' breeding stock of horses in Elsdon Parish, 458; horse sacrifice by the Scythians, 465; horses thrice victorious at Olympus, buried, 465; horses led to shrine of Ippolyt's church, 465; horse's-head at Lilliesleaf, 465-6; horse-sacrifice, 512, 513, 523, etc.; horse a sacred animal, ib.; veneration for among Germans, Northmen and Franks, in Asia Minor, Zealand, and among Anglo-Saxons, 514-5; Emblem of the sun, 515; of victory, 524; in Etruscan and British tombs, 516; symbol of on coffins in Japan, 516; on British coins, 516-520; "Great White Horse" of Berks, 518; horse in the Welsh Triads, 520.
 Horsley, Rev John, some of his Writings, 301-2.
 Hoscoat, 112.
 Hoton, prior of Durham, 70.
 Houndwood House, Meeting at, 11-14; Inn, 15; Free Church, 15; Mill, 15; Urn found near, 15, 56.
 Howard, Lord William, Vindication of, 282-3; traces of his work at Naworth, 280-1; his death, 284.
 Howards of Overacres in Redesdale, 456.
 Howick Woods, 35, etc.; Church and Hall, 39.
 Hugh de Pudsey, Bp. of Durham, 68, 75, 77.
 Hughes, G. P., Obituary Notice of Mr George Shield, Wooler, 181; on Winter 1879-80 at Middleton Hall, 332.
 Humble-bees, 17, 571.
 Hume, Sir Patrick, (afterwards Earl of Marchmont) and his Countess, 44-5.
 Humshaugh, Winter 1879-80 at, 338, etc.
 Huntlywood, 242.
 Hutton Hall, Notice of, 194.
 Hutchison, Robert, measurements of trees, 426.
 Hymenophyllum Wilsoni, 187, 542.
 Ichneumons, minute, from Newcastle district, 299.
 Inchbrakie's Ring, 35.
 Indra, Indian Sun-god, 515, 517.
 Ingeniatores, William & Richard, 68.
 Innerleithen, Meeting at, 478; Lead in churchyard, 481; Sculptured Stone at, 545-6; Old Church, 546; Sanctuary at, 546.
 Innerwick Castle, 221.
 Inscription on Stone at Biel, 434.
 Insects, on the occurrence of certain, 369.
 Iona, centre of Christianity to North-umberland, 58.
 Ireland, as a centre of Missionary Work and Art, 59-60.
 Iron Scoræ in Redesdale, 466.
 Irthing river, 271; Plants and Bridge on, 284.
 Jack, David, on Winter 1879-80, 310.
 James I. and II. of Aragon, 7-8.
 James VI. at Spott House, 216.
 Jarrow, 62, 65.
 Jasmine, old, at Naworth, 281.
 Jasper, Native, at Ramshope, 466, 536.
 Jedborough, 117.
 Jedburgh, Abbot of, his land at Troughend, 474.
 Jedburgh, Winter 1879-80 at, 345.
 Jeffrey, Alex., on the Catrail, 107-108.
 Jet necklace at West Morriston, 49; Ring, 96.
 Johnston, Dr George, 2, 416, 417, 420, 421.
 Johnstones of Hutton Hall, 194.
 Jones, Rev. A., on Effects of Winter 1878-9, 149.
 Jones, Rev. Robert, 420.
 Jouns at Spott, 217.
 Jupiter, Altars to, 271, 273, 278; and Hercules, 277.

- Kelly, Andrew, on some of the rarer Lepidoptera, 383.
- Kelso and Morebattle Meeting, 20;
- Kelso Meeting, 474; Abbey, peateries of, at Gordon, 231; Monks of, their tithes in Redesdale Forest, 458; Winters 1878-9, 1879-80, at, 153, 342.
- Ker, George of Samuelston and Hutton Hall, 194; Charter of, 222.
- Ker, John of Morriston, Tomb of, 237-8.
- Ker, Sir Robert, 161, 162, 164.
- Kerr, James B., on Unpublished Verses by Sir Walter Scott, 171.
- Kestern, Patrick de, 259.
- Key of Cowdenknowes' Dungeon, 244.
- Keyheugh and its Wishing Well, 302.
- Kimmerghame, Winters 1878-9, 1879-80, at, 136, 310,
- Kinnear, William, 496.
- King's Peace, 546.
- King's Stables, 269.
- Kirkhill, 237.
- Knife Dagger from Flodden, 244.
- Knight, Henry, on Winter, 1879-80, 343.
- Knights of St. John, 218.
- Knockhill, 233, 234, 236, 242.
- Knocker at Traquair, 485.
- Ladykirk Church, Skeletons at, 524.
- House, Winter 1878-9, at, 138.
- Lady's Walk, 255.
- Lakenby, Hugh de, 259.
- Lamberton Moor, Whetstone found on, 543.
- Lamington dean, 10.
- Lammermoors above Spott, 218.
- Landslip at Marchmont, 81.
- Lanercost, 275, 378-9; Bridge, 276; Priory, 277; Monuments, 277; Roman Remains at, 277; History of, 278-9; Chronicle and Register of, 279.
- Langley, Cardinal, Bishop of Durham, 70.
- Lapis Lazuli, 35.
- Lawrence, Prior of Durham, 79.
- Lead Ore and Mines, 481.
- Lead Pipe of Kelso Abbey, 478.
- Labour, Professor, G.A., F.G.S., Fossils in Calcareous Shale at Foxton Hall, 79; on the Geology of the country round Elsdon, 525-30; the named Stones of Northumberland, 531-36.
- Lee-Pen, 481; Castle, ib.
- Lees, Thomas, on Winter 1879-80, 315.
- Leet, Stone Balls found in, 158-9, 162.
- Legerwood, Church, Churchyard, and Ministers, 237, 240; Farm, 241, 242.
- Leonard St., Hospital and Chapel, 261.
- Leper Window, 456; Hospital, 469, 470.
- Lepidoptera, 21, 32, 178, 231, 280, 287, 294-6, 353-4, 368, 371, 374, 379, 383.
- Lepidoptera on some of the rarer, 383.
- Lepidoptera taken near Gordon, 294-6.
- Lesbury, 33.
- Lesmahago, Sanctuary at, 546.
- Lesser Whitethroat, 400, 562.
- Letheme (Leitholm) Lands, 162.
- Leuchie Gardens, Winter 1878-9, at 316.
- Lewis Burn Dyke, 530.
- Liddesdale Kiln Pots, 121.
- Lilburn Tower, Winters 1878-9, 1879-80, at, 147, 324; Rainfall at, 207, 413, 571.
- Lindisfarne Gospels, 60.
- Lindisfarne, Notice of, 60-63.
- Linglee Hill, 110.
- Linnæa borealis, 229, 242, 294.
- Linton and its Ministers, 28-9; Font, 29.
- Linton-Rotheric, 29.
- Lithostrotion junceum, 528.
- Lochend, 214.
- Locusts, 275, 378-9.
- Loney, Peter, on Winter 1878-9, 140; Trees and Shrubs, killed in Berwickshire in 1878 and 1879-80, 314; Measurements of the Dunse Castle Araucarias, 380; Measurements of Coniferae at Rowchester, 548; Weather Notes at Marchmont from 1879 to 1881, 572-3.
- Long-barrows at Birdhope Craig and Cottenshope Burnfoot, 473.
- Longhoughton, 33.
- Longstaffe, W. H. D., F.S.A., on Durham Castle, 73-77.
- Lorbottle, Cuckoo Story, at, 228.
- Lover's Walk, 255.
- Lucker Chapel, 246.

- Lysimachia vulgaris*, 271, 275, 468.
 Maiden Castle, 73.
 Maiden Loup, 216.
 Maiden Paps, 115.
 Maiden Way, 118.
 Maidment, James, Obituary Notice of, 54, 191, etc.; Publications of, 196, etc.
 Makerston and Corbie Craggs, 476.
 Malcolm Canmore, Defeat of, 74.
 Malcolm the Maiden and Innerleithen, 545-6.
 Marchmont, Meeting at, 40; Grounds and House, 41-5; Winter, 1878-9 at, 140; Weather from 1870-81 at, 572-3.
 Margaret, daughter of Henry VII., at Newminster, 260.
 Marlefield, 24, 26.
 Marsh Titmouse, 563.
 Mary, Queen, her Bedroom at Houndwood, 4; Letter of, 45.
 Maserfield, battle of, 59.
 Mathison, Robert, on Stations for Woodsia ilvensis, 542; on a Sculptured Stone at Innerleithen, 545.
 Maturnues, 459, 460, 541.
 McLean, Allan, on Winter 1879-80, 318.
 Medals, Silver, 275.
 Meeting Places, 53, 287, 413, 571.
 Meiklerig, Urn at, 439.
 Mellerstane Woods, 228-9.
 Melsanby, Thomas de, Prior of Durham, 69.
 Members, New, 208, 414, 442, 450, 474, 478, 491, 492.
 Merley de, Lords of Morpeth, buried at Newminster, 257-8.
 Mertoun House Gardens, Winter 1879-80 at, 312.
 Mice, Long-tailed Field, in storm, 126.
 Middleton, Sir Gilbert de, 263.
 Middleton Hall, Belford, Club at, 251.
 Middleton Hall, Wooler, Winter 1879-80 at, 332.
 Midsummer Fires, 454-541.
 Migration of Birds on the Borders, 387-409, 490-410; 549-563.
 Mildred, the Saxon Lord of Redesdale, 455.
 Milne-Graden, Winter 1879-80 at, 311.
 Minchmoor, 111; Road, 485.
 Minto House, Winter 1879-80, at 348; Remarkable Trees, 381.
 Mitford Village, 262; Castle, its history and associations, 263; Church, 263; Bells, 264; Hall and Gardens, 264-5; Miraculous Well, 266.
 Mithras, Worship of, 516, 517.
 Mniun affine, 243.
 Mollusca, killed by frost, 500, 501.
 Monks of Durham, early arrangement, 64-5; Benedictine, 65.
 Mons Meg, her Balls and History, 158-164.
 Montague, Hon. Charles, of Belford, 246; James of, 246.
 Montgomery, William, of Mackbiehill, Peebleshire and Whitslaid Tower, Tomb of, 236.
 Monteviot, Winters 1879-80, 1880-1 at, 345, 567.
 Montrose at Traquair, 485.
 Moor Gravels, 526.
 Moraine Heaps, 526.
 Morebattle, 28; Celt at, 275.
 Morel, Edible, 441.
 Morpeth, Meeting at, 254; Town, 254; Bridges, 254-5; Inns, 254-5; Church of St. James, 255; Lords of, 257-8; Authors, rare books by, 300; Winter 1879-80 at, 330.
 Morriston or Moristoun, Ker of, 237-8; Cranstoun of, 241.
 Morwick, Winter 1879-80 at, 329.
 Mosilee, 109.
 Moss Maw, 444.
 Mote Hills, *see* Elsdon.
 Mountain ash or Rowan tree, virtues of, 520.
 Mountain Limestone, 527-8.
 Muirhead, George, Winter 1878-9, at Paxton House, 136.
 Mumps Ha'at Gilsland, 268-9.
 Mungo Park and Sir Walter Scott, parting of, 111.
 Mycetobia Persicæ, 372.
 Mymaridæ, List of, 299.
 Nag's Head Inn, Morpeth, and Lord Eldon, 255.
 Natural History, pleasures of the study of, 3, 4.
 Natural History of North Northumberland, Scraps on, 353.
 Naturalists' Clubs, on the Co-operation of, 563.
 Naworth Castle, 276; Woods, 279; Castle, 280-282.
 Necklace, Jet, at West Morriston, 49; from Q. Elizabeth at Biel House, 431.

- Nelson's Order of Battle at Trafalgar, 287.
- Nest, The, 479.
- Newbigging, Laids, Folks and the Moon, 224.
- Newminster Abbey, Site of, remains of its Buildings, History, Excavations at, 255-261; Burials at, 257-9; Possessions of, 259; Royal Visitants, 259, 260; Osieries for basket-making, 260; water conduits and canals, 260-2.
- Nicholas, Chaplain at Belford, 245.
- Nicol, Rev. James, Notice of his Writings, 486; Professor James, 486.
- Norham Castle, 5, 74, 75; Balls and Siege of, 159-164.
- Norham, Winters 1878-9, 1879-80, at, 143, 320.
- North Berwick, Winter 1879-80, at, 315.
- Northumbrians attack Durham and Gateshead, 74.
- Nostell Priory, 245-6.
- Notre Dame, heathen symbols beneath altar of, 524.
- Nudd Hael of Strathelyde, 440.
- Nuremberg Chronicle, 483-4.
- Oak Bog, 244; Oaks at Naworth Castle, 276; Great, near Dalston, and other Oaks at Rose-Castle, 381-2.
- Obituary Notices, 54, 55, 181-195, 288-290, 494-497.
- Oldcambus, Winters 1878-79, 1879-80, at, 122, 304.
- Oliver, Anthony, Winter 1879-80, 327.
- Oliver, Joseph, Winter 1879-80, 326.
- Orange trees at Mitford, 179.
- Orchard Mains, 487.
- Ord, John, Obituary Notice of, 289.
- Ormiston House, Winters 1878-9, 1879-80, at, 154, 344.
- Ornithological Notices, *see* Birds, etc., and Index of Birds.
- Ornsby, Canon, on Durham Castle, 77-79.
- Oswald, king of Northumbria, 58-60.
- Otterburn, Tower, 462; Church and Village, 463; Battlefield, 463; its sylvan attributes, 464; Plants and Birds in dean, 468-9; great Cairn at, 469; Dead in the Battle, 509.
- Ottercaps, 452.
- Padon's or Peden's Pike, 452.
- Pagan customs, survivals of, 510, 511.
- Page, John, Winters 1879-80-81, 345, 567.
- Paintings at Marchmont, 44; Belford Hall, 247; Middleton Hall, 251; Naworth Castle, 280-1; Biel House, 432-3.
- Pallinsburn, Winter 1879-80, at, 337.
- Park, Mungo, relics of, 491.
- Parkend, Walwick and Chesters, Winter 1879-80, at, 337.
- Pass of Pease and Cromwell, 13.
- Patten, John, Winter 1878-9, 148.
- Paxton, Dr John, Anniversary Address, 1-5.
- Paxton House, Winters 1878-9, 1879-80, at, 136, 311.
- Paulinus, 57, 58.
- Paul, Rev. David, Fungi in the immediate vicinity of Roxburgh, 537-8.
- Pease Bridge, 445-8; Pease-dean, 447-8.
- Peat and Peat Marls, 526.
- Peden, Alex., the Covenanter, 452; his Pulpit, *ib.*
- Peel-fell, 116.
- Penchrise-pen, 114.
- Penmanshiel wood, visit to, 443.
- Petrified Toad, 478.
- Pheasant, food of, 563.
- Phial, Glass, found at Kelso, 33, 100.
- Phoenicians, Sun-worship by, 465.
- Phytomyza Ilicis, 12.
- Phytopus, (Plant Mite), of Birch Knots, 444.
- Pickie Moss and its Gulls, 241.
- Picts House at Broomhouse, 83.
- Picts-Work Ditch, 105.
- Pike Hill, 114.
- Pilgrimages to Gilsland Well, 285.
- Pillory and Cucking Stool at Morpeth, 254.
- Pinkerton (Little), Chapel at, 216; Edward I., at, 216.
- Pirn Craig and Pirn, 481.
- Pitt's (William) Gold Chain, 431.
- Place or Palace Green, Durham, 75.
- Plague, traditions of, 253.
- Plants, List of found near Gordon, 293-4: *see* Botanical Notices.
- Plora Glen, 480.
- Plum Scale, 370.
- Plusia Gamma: ravages of its Caterpillars, 21, 374.
- Polecat, 276.
- Poltross Burn, 267-8, 271; Roman Bridge at, 269.
- Polworth Church and Ministers 45-6

- Bell, 46; Vault and Font, 46.
 Polygonal Grinding Stone of Quartzite from Lamberton Moor, 543.
 Poore, Bp. of Durham, 69.
 Pope Tree, 381.
 Popping Stone, 285.
 Porpoises, Round-headed, 39.
 Porteus, Capt., Notice of, 489.
 Potamogeton Ziezii, 49.
 Potentilla alpestris, 187.
 Presmennan Lake, Birds found near, 503, etc.
 Priests, married and hereditary, 64.
 Priesthope Burn, 480.
 Primroses, varieties of, 16, 17.
 Pringle, Walter, of Greenknowe, 232, 242.
 Procotrupidæ, List of, 299.
 Productus giganteus, 528.
 Psamma Baltica, 188, 190.
 Psylla Pyri, 377.
 Purves Hall Terraces, 480-1.
 Pyot's Nest Camp, 113.
 Quarryford, E.L., urn at, 450.
 Queensferry Paper, 22.
 Quercus Ilex, 39, 247, 265.
 Querns, 97, 117, 247; at Innerleithen, 482; two-handed at Wolfelee, 490.
 Rabbits in Severe Winters, 128, 133, 134, 329, 499, 500-502.
 Ralph lay-brother of Newminster, 260.
 Rainfall, 207, 413, 571, 572-3.
 Rain-wash, 525.
 Rampy-wood, 479.
 Ramsay, Allan, 24, 25.
 Ramsay, Wm. of Templehall, 25.
 Ramshope Jasper, 466, 536.
 Rattenraw, saying about, 470.
 Ravenscleugh near Elsdon, 453.
 Ravensheugh near Selkirk, Winter 1880-1, at, 567.
 Raylees, 453.
 Redbraes House, 42.
 Rede, Percy, of Troughend slain, 462.
 Redesdale, Meeting in, 451; its aspect, 452-3; forest, haras in, 458; tithes of foals in belonged to Kelso, 458; ancient state of, 511-12; Umfravilles, Lords of, 258, 455, 458, 461.
 Redewater Minstrel, 466.
 Redpath pond and its Gulls, 241.
 Redpath or Reidpeth of Foulfuirdeleyes, 13, 14; Mr Thomas and Major John, ib.
 Reeds of Troughend, monument of, 456.
 Reid, Mr, Great Frost of January, 1881, at Blackadder, 301; Plants killed or injured by Frost, 309.
 Reid, Samuel, Winter 1879-80, 434.
 Renton House and Gardens, 445.
 Renton, Robert, Lepidoptera near Gordon Moss, 294.
 Reston, Meeting at, 9.
 Richardson, William, Obituary Notice of, 54, 184, etc.
 Ridley, J. M., on Winter 1879-80, 337.
 Rings, antique, at Houndwood, 14; Dunbar and Flodden, 19; Swarland and Norham, 34; Garchory, Chichester, Inchbrackie, Wedderlie, 35; Bishop's at Durham, 64; Selkirkshire, 275, 302; Cairncross, 288.
 Rings and Wheels applied to places, 118, 244.
 Rink Hill and Camp, 106, 110.
 Robert, St, abbot of Newminster, 257.
 Robert with the Beard, 455.
 Roberts-linn, 114-5.
 Robertson, Dr E. C., on Skeletons exhumed at Elsdon, etc., 506-9; on a Discovery of Horses' Heads in the belfry of Elsdon Church, 510-524.
 Robertson, Wm., Effects of Winter at Ayton Castle Garden, 309.
 Robin-mend-the-Market, 258.
 Robin of Risingham, 466.
 Robson and Son, on Winter 1879-80, 334.
 Robson-Scott, J., M.D., Time of Arrival of Migratory Birds at Belford, Bowmont water, 409-410.
 Rock, Winter 1878-9, 1879-80, at, 147, 324.
 Roe-deer, 453-4.
 Roger, rector of Elsdon, claim for tithes of Haras, 458.
 Roman Cippi, 471; Monuments at Elsdon, etc., 456, 459, 460, 461.
 Roman Wall at Gilsland, &c., 268, etc.
 Roman Camp at Lyne, 490; at Candy Castle, 491.
 Romanes, Robert, on Winter 1878-9, 141.
 Rood Well at Stenton and the Holy Rood, 488.
 Rookeries, 11, 26, 216, 221, 382, 428.
 Rooks planting Acorns, 382.
 Rosa systyla, micrantha, Forsteri and sarmentacea, 188, 233.
 Rose-leaf Saw-fly, 373.

- Rose-Castle, Cumberland, Oaks at, 382.
 Rose-Noble, 267.
 Rothbury Grits, 529.
 Rottenrow at Berwick, 286.
 Rowchester, Coniferæ at, 548-9.
 Rubi, species of, 188.
 Ruins, preservation of, 5, 440.
 Russell, Miss H. J. M., on Winter 1879, 351; on Antiquities at Ashiesteel, 386.
 Russell, Francis, on the lateness of the Spawning of Salmon, Salmon Disease, etc., 154.
 Ruthall, Bp. of Durham, 78.
 Salar Genus, arrangement of, 180.
 Salmo Genus, arrangement of, 180.
 Salmon Disease, 155.
 ——— Late Spawning of, 154.
 Sanctuary at Innerleithen, etc., 546.
 Sapphire set in Rings, 34, 35, 64.
 Saxifraga Hirculus, 49.
 Scarth, Miss A. M. E., on the Countess Wolkowsky (The Princess Zenaide Walkouski), 174-5.
 Scott, Alex., on Winter 1878-9, 138.
 Scott, Andrew, Obituary Notice of, 496.
 Scott, John, Winter 1879-80, 318.
 Scott, Sir Walter, at Durham, 50; last Verses written by, and Documents relating to, 32, 171, etc.; and the Catrail, 107; at Wardrew, 285; his Courtship, 285; his Mumps Ha', 268; his erroneous view of Lord William Howard, 282-3; his Oak, 479; Anecdote of, 485; Letters of, 491.
 Scrophularia nodosa, Uses of, 267.
 Sculptured Stone at Innerleithen, 545.
 Seaton, 32, 38.
 Selkirkshire, Winters 1879-9, 1879-80, 1880-1, in, 155, 349, 565.
 Setons of Greenknowe, 232.
 Shankend Hill, 114.
 Shawdon, Winter 1879-80, at, 325.
 "Shawdon Hollies," 325-6.
 Shawes Farm, 285.
 Shearer, Alex., Winter 1879-80, 317; Trees at Yester House, 380-1.
 Shield, George, Obituary Notice of, 181.
 Shields of Arms at Naworth, 281.
 Silvanus, Altar to, 277.
 Silver Ornaments, 242; Rings, 19; and Brooches, 303.
 Sirex Gigas, 32, 478.
 Skaithmuir, battle at, 8.
 Slates at Thornilee, 479, and Gries-ton, 481.
 Smail, James, F.S.A., The Catrail or Picts-Work-Ditch, in 1880, 105; Gooseberries in October, 157.
 Snarisdelf, 466.
 Snow Storms of 1880-1, 498-503.
 Solomon's Seal, Use of, 264.
 Spear-head of Flint, 53; of Iron, 244; Spear-Silver, a tax, 160-1.
 Spence, Rev. Adam, Obituary Notice of, 496.
 Spergula arvensis, provision for seed-ripening, 444.
 Sphinx Galii, 32; Convolvuli, 437, 478.
 Spiguel, 12, 30.
 Spindle Whorles, 30, 53, 96, 244, 288.
 Spital Hill, 261.
 Spott, Dean, House, etc., 214-8; Laird of, Proverb of, 215; Battle at, 216; Spottmoor, battle at, 217.
 Springwood Park, Winters 1878-9, 1879-80, 155, 349; Gardens and Grounds, 477.
 Squirrels, 100, 435.
 St. Andrews, Gift of Boar's Chase by Alexander I., and Arabian Steed as seisin, 457.
 St. David's Cairn, hollowed Slab at, 444.
 St. Hippolytus, Shrine of, at Ippolyts, Herts, 465.
 St. Paul's Chair at Biel, 434.
 St. Ronan's Well, 489.
 Stags, bones of, 74.
 Stamfordham, Winter 1878-9, at, 149.
 Stanegate on Roman Wall, 269.
 Stanners, The, 255.
 Stannington, Winter 1878-9, 149.
 Stenton, Ancient Interments near, 100; Font, 434; Market, 438; Rood-well, ib.; Church, new and old, 439; Biel Vault and Monument at, 439.
 Stevenson, John, Antiquarian Bookseller, 193.
 ———, Thomas G., Bibliographical List of the Publications of James Maidment, 193, 196-204.
 Stevenson Gardens, Winter 1789-80, 318.
 Stichel, Baron-Court Book of, 242-3.
 Stoat Weasel, 427.
 Stobbs, Rev. William, Plants near Gordon, 294.

- Stobshiel, E.L., Urn at, 450.
 Stockdove, 18, 165, 562.
 Stomoxys calcitrans, 374.
 Stone Bead, 53; Implements, 243; 466-8; Cannon Balls found in Swinton parish, 158; Standing, 215; Vessel, 444.
 Stones, the named of Northumberland, 531-6.
 Storks, their mythology, 519.
 Strait-loup, 99.
 Straw-bonds, 180.
 Stuart, Charles, M.D., on Winters, 1878-9, 1879-80, 133, 305; Frost in November, 1880, 307; Frost at Blackadder, 307.
 Stuart, Charles, M.D., and Sadler, John, List of Plants from the neighbourhood of Gordon, 293-4.
 Stuart, Hon. Lady Louisa, 485-6.
 Sun Emblems and Worship, 515-6.
 Sunderland Hall, 110.
 Superstitions common to India and Britain, 520-1.
 Swallow-holes, 121-2, 528.
 Swastica in Japan, 516.
 Swinton House, Balls at, 158.
 Swinton, A. Campbell, LL.D., on Winters 1878-9, 1879-80, 136, 310.
 Sycamores, 426.
 Symeon of Durham, 66.
 Tapestry, 14, 281.
 Tate, George, F.G.S., 37, 38, 420.
 Tate, John, on Winters 1878-9-80, 329.
 Taylor, Rev. Hugh, on Winter 1879-80, 338.
 Teindside, 113.
 Templar Lands and Spott, 215, 218.
 Templehall, 25.
 Tenant-right, old Claims of, 224, 286.
 Teuchets, The, 217.
 Thalictrum flexuosum, 187, 475.
 Thirlstane Castle, Lauder, Winters 1878-9, 1879-80, 140, 313.
 Thirlwall township, 269.
 Thompson, G. H., on Straw Bonds, 180.
 Thomson, James, author of the Seasons, 24.
 Thomson, James, on Winter 1879-80, 325; on native Jasper, 536.
 Thornilee Crag, Slates and Fossils, 479-80.
 Thorp, Rev. Charles, Obituary Notice of, 55.
 Three Brethren Hill, 111.
 Thurston Woods, 221.
 Tinkler's loup, 220.
 Topley, Wm., F.G.S., on the Geological Survey of Northumberland, 40.
 Torwoodlee Rings, 105, 109.
 Traquair House, and antiquities there, Notice of, 482-486; Family of Stuart, Earls of Traquair, 485-6; Village, 486; Bush, 487.
 Treasure-Trove at Langhope, Selkirkshire, 303.
 Trees, Native, 218.
 Trees, Notable, 11, 12, 25, 26, 27, 28, 40, 41, 216, 247, 249, 256, 276, 282, 325, 327, 380-2, 425, 426, 427, 428, 430, 435-6, 474, 548-9.
 Trilobites, 482.
 Trochilium Myopæforme, 371; Tipuliforme and exitiosa, 372.
 Trotter, Henry, Winters, 1878-9, 1879-80, 143, 321.
 Trotter, William, Winter 1879-80, 335.
 Trotter-roofing, 281.
 Troughend, 474; Dyke, 530.
 Trout, Common versus Sea-Trout, 179; 429.
 Trout of great age at Earlstoun, 547.
 Trows, derivation of, 475.
 Tuedian series of Rocks, 527.
 Tughall Chapel, 240.
 Tumuli and Cairns, 101, 242, *see* Barrows and Cairns.
 Tunstal, Bishop of Durham, 76, 77, 78.
 Turnbull, John W. S., on Edin's Hall, 81 *etc.*
 Turner, Dr William, his Writings 300.
 Turret, Roman, remains of, 274.
 Tweedhill, 194.
 Tynningham Church, Sanctuary at, 546.
 Tynningham House, Winters 1878-9-1879-80, at, 142, 318.
 Ulex Galii, 288.
 Umfravilles, buried at Newminster, 258; Notices of the, 452, 455, 458, 461.
 Underheugh, Roman Altar at, 271.
 Upsetlington, 162.
 Urns, British, 15, 56, 102, 242, 250, 252, 265, 439, 450, 472, 480.
 Utricularia minor in Flower, 493.
 Vaux, Sir Roland de, Lord of Tryernayne, 277; Sir Robert de, Lord of Gilsland, 278.

- Vernon, J. J., F.S.A., Notice of Treasure Trove, Feb. 1880, 303.
- Verses written by the Countess of Wollenluss Request, 173; *see* Wolkousky, and Scarth.
- Viper, Common, 231, 250, 429, 443, 473-4, *see* Adder.
- Visé Limestone, 528.
- Walcher, Bishop of Durham, 65, 74, 77.
- Walker, Rev. J. H., Obituary Notice of, 495.
- Walkerburn, Notice of, 480.
- Wallace's Hill and Camp, 482.
- Wallace's Mill, 219.
- Wallace's Trench, 111.
- Wallace, Sir W., Battle at Spott, 217; at Lanercost, 279.
- Walnut Trees, 425-6.
- Walwick, Winter 1879-80, at, 337.
- Wansbeck River, 261-2.
- Wardenlaw, 73.
- Wardrew Spa, 284-5; House, 284.
- Wasps, 17, 347-8, 568, 571.
- Watling Street, 453, 470, 471.
- Watson, Charles, F.S.A., Anniversary Address, 211.
- Wearmouth Church, 65.
- Weather at Marchmont 1870-1881, 572-3.
- Wedale or Stow, Sanctuary and Image of the Virgin at, 546.
- Wedderburn Castle, 162.
- Wells; dishes at by King Edwin, 266; Pilgrimage to Gilsland Wells, 286; Wishing Well at Keyheugh, 302; St. John's Well at Spott, 218; Verter Well in Garden Moss, 231; St. Mary's Well at Belford, 250; Rood Well at Stenton, 438; Well-worship, 510-, 511.
- Wells, Remarkable Trees at, 381.
- Wemyss, George, On Winters 1878-9, 1879-80, 151, 340.
- Wheel-Causeway, 107, 108, 116.
- Wheel-rig and Wheel Church 116, 117.
- Whet-Stones, 96, 97, 102, 103, 468, 543.
- White, Robert, his History of the Battle of Otterburn, 464.
- Whitehope, 111.
- White Horse of Berks, Kent, Old Saxons and Hanover, 518.
- Whitton, James, on Winters 1878-9, 1879-80, 140, 318.
- Wicht of Gordon Mill, Slaughter by, 240-1.
- Wild Boar, Tradition of, 220.
- Wild Cat, and Wul-Cat-Brae, 15.
- William de St. Barbara, Bp. of Durham, 68, 75.
- Willoby, Edward, Winter 1878-9, 143.
- Willowford Farm and Peel-house, 270; Roman Bridge at, 270.
- Wilson Alex., His Visit to Dunbar and Relics of, 222, 291-2.
- Wilson, Robert, M.D., Obituary Notice of, 496.
- Winters Effects of, 9, 10, 11, 24, 29, 37, 128, etc., 228, 234, 251, 252, 261, 262, 263, 265, 280, 433-5, 463, 469, 477, 488, 565, 566, 567, 567-571.
- Winter, Moth, Caterpillar, Injury to Gooseberries by, 30, 287.
- Witch Knots, Cause of, 443-4.
- Witch Stone, 288.
- Witches, 216.
- Wolf-Crag and the Wolves of Redesdale, 452, 461; Wolves at Durham, 79.
- Wolkousky, Countess (Princess Zen-aide Walkouski), and Sir Walter Scott, 174-5.
- Wood, James, On Winter 1878-9, 157; On a Trout of great Age, 547.
- Wooden's Hall, 82.
- Woodhall, E. L., Winter 1878-9, 128, 131; Woods, 219.
- Woodpeckers, 562.
- Woods, aboriginal, 15, 219, etc.
- Woodsia Ilvensis, Stations for, 542.
- Wreighill or Werrihill, 258-9.
- Wright, Rev. Adam, on the Roman Wall near Gilsland, 268, etc.
- Yarrow, Inscribed stone in Vale of, 440.
- Yester Gardens, Winter 1879-80, at, 317; House, Trees at, 380-1.
- Yirding of a live Cock, 511.
- Yoredale Rocks, 527.
- Yule, 511.

ERRATA AND ADDITIONAL PARTICULARS.

PAGE, 468, 14th line from top, *for* breath, *read* breadth.

„ 470, 9th „ „ *for* Sheet, *read* Street.

„ „ 26th „ „ *for* Breedless, *read* Breadless.

„ 488, 36th „ „ *for* Grey, *read* Gray.

„ 495, 19th „ „ *for* Yarrel *read* Yarrell.

„ 562, 29th „ „ *for* Mirlin *read* Merlin.

„ 237, 23rd „ „ *for* covered *read* put up the couples of.

„ 237, 24th „ „ *for* it *read* the slating.

„ 238, 22nd „ „ *for* the Montgomeries of Mackbiehill, etc.,
read William Montgomery of Mackbiehill,
Peebleshire, proprietor of Whiteslaid
Tower in the Parish.

„ 401, 25th „ „ *for* GREY-LAG (Anser ferus) *read* GREY
GEESE.

PAGES 237 and 439. AGE OF CHURCHES.—According to Muir's Ecclesiological Notes, Legerwood is an example of the pure Norman Church, of the age of St. Helen's, Oldcambus, St. Andrew, Gullane, Chirnside, Linton, Rox, Morebattle, Edrom, Ayton, Tynningham, and part of Coldingham. In the first-pointed period, or as doubtfully Norman, he places Stow, Cockburnspath, St. Martin, Haddington, Prestonkirk; but considers the following as scarcely claiming this age; Pencaitland, Stenton, Oldhamstocks, Polwarth, and Edrom. A segmental-headed doorway at Stenton, he thinks, may belong to the second-pointed period. Of this later age he gives as examples, St. Giles, Edinburgh, St. Matthew, Roslin, Dunglass, Crichton, Borthwick, St. Mary, Haddington, St. Cuthbert, Yester House, St. Mary, Whitekirk, Seton, St. Mary, Ladykirk, and the Chapel in Tantallon Castle.

22 DEC 1887



